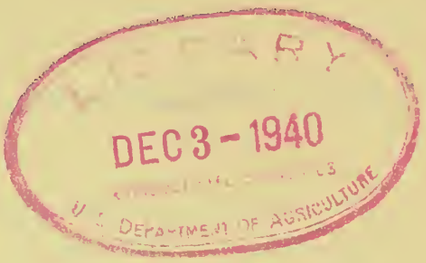
S O I L  C O N S E R V A T I O N  L I T E R A T U R E
SELECTED CURRENT REFERENCES

V.4 November/December, 1940 No.6






Accuse not Nature! she hath done her part;
Do thou but thine!

- John Milton

Compiled By The Library Staff Of The Soil Conservation Service
From Publications Received In The
United States Department of Agriculture Library, Washington, D.C.

The publications listed herein may, in most cases, be borrowed from the Library of the Soil Conservation Service by members of the Washington and field staffs.

Loan requests should be submitted on Form SCS-405; those from field offices being routed through Regional Office Libraries. Complete citations, together with library call numbers, should always be included.

Mildred Benton

Mildred Benton
Librarian

## PERIODICAL ARTICLES

### Beavers

Beaver play double role of Dr.Jekyl and Mr.Hyde. West.Farm Life 42(18): 23. Sept.15,1940. 6 R153

Summarizes report on beaver act.

"Beaver,long renowned as animal engineers on woodland and forest streams,are now being credited with playing an active part in soil and wildlife conservation...

"The latest favorable comment on the activities of these builders has come from a report sent to the fish and wildlife service,United States department of the interior,by the Utah Fish and Game Commission."

This report is summarized.

Bonwill,A.H.and Owens,H.B. The return of a native. Md.Conserv.17(3): 3-4,19-20. Summer Issue,1940. 279.8 M36

Commends the return of the beaver to Maryland for the "beaver are important to our welfare in many little-known ways.They give us,instead of a fluctuating stream,destructive in flood time and stagnant in drought,a living pond with well-balanced flora and fauna,which is a spawning ground for fish,an erosion-check for our valuable soil,and a reservoir for time of drought."

Cox,W.T. The beaver - friend of the forest. Amer.Forests 46(10):448-450,476-477,illus. Oct.1940. 99.8 F762

Shawver,Rowe. Brainy builder beaver. West.Sportsman 5(3):6-10,40, illus. Aug.1940. 410 R59

"In 1387 when an estimated thousand beavers were all that survived in Colorado,the species was given protection that has continued to the present.In these 53 years,its numbers have increased to between 80,000 and 85,000.Beavers are now systematically trapped where troublesome and moved to other areas where they will be useful.Trapping and transporting methods are described and illustrated;the animals are placed 2 to 8 in a colony.They have proved useful in making pools in trout streams,in conserving water that could be used for irrigation, and in controlling erosion.Notes on habits of the animals and on their introduction to areas other than Colorado also are given."

An accompanying note by Clifford C.Spender records in text and photographs the interesting fact that young beavers ride on the tail of the parent. Abs.U.S.Fish and Wildlife Serv.Wildlife Rev.no.28, p.30, Aug.1940.

### Capillarity

Schultze,K. Laws of capillary behaviour in soil(Kapillargesetze des bodens; Kolloid Ztschr.90(3):268-294. Mar.1940. 384 Z315

In German.

A general discussion of factors influencing the movement of water in soils under the action of capillary forces.

Channel Dimensions

Hickok,R.B. A graphical method for direct determination of channel dimensions. Agr.Engin.21(9):343-345,illus. Sept.1940. 58.8 Ag83
"Presented before the Soil and Water Conservation Division at the annual meeting of the American Society of Agricultural Engineers at State College,Pa.,June 17,1940."

County Planning

Tolley,Howard and Smith,Russell. The sovereignty of good will. Jour. Politics 2(3):259-277. Aug.1940. 280.8 J827
In this discussion of democracy in the agricultural program,the work of each agency,including the Soil Conservation Service is outlined. County planning"an instrument of all the people"is described as"a step toward tuning democracy to modern economic conditions."

Dams

Bailey,Robeson. How not to build a dam. Country Life[Garden City, N.Y.]78(4):18,36,illus. Aug.1940. 80 C832
An amateur builds an earth dam.

Barnhill,O.H. Sepulveda dam;elevating grader and pile drivers used on 3-mile flood-control project;earth-fill structure is part of U.S.E.D. program to protect Los Angeles and environs from flood. Contractors and Engin.Monthly 37(10):1,10-11,29. Oct.1940. 290.8 C765

Hough,B.K. Fitting rolled earth dams to local materials.Recognition of functional possibilities of nearby quantities may permit economies of haul or yardage and may improve stability. Civ.Engin.10(11):689-692, illus. Nov.1940. 290.8 C49

The John Martin reservoir project. Engin.News-Rec.125(19):614-617,illus. Nov.7,1940. 290.8 En34
"John Martin Dam(formerly Caddoa Dam)on the Arkansas River in southeastern Colorado,is one of the series of large projects being built for flood control and water conservation in the Great Plains area.The project,which will reduce all floods of record in the upper river to a maximum of 10,000 cfs,includes a combination concrete and earthfill dam with overflow spillway,20 miles of relocation of main line of the Santa Fe Ry.,minor highway changes,abandonment of the village of Caddoa,and special flood protection for the Fort Lyon veterans hospital located in the upper limb of the reservoir area.The railroad work is well along and construction is past preliminary stage.Contract was awarded in July."

Ecology

Graham,E.H. Ecology and land use. U.S.Soil Conserv.Serv.,Soil Conserv. 6(5):123-128,illus. Nov.1940. 1.6 So3S

Farm Appraisal

Nanney,L.C. The appraisal of alfalfa lands in semiarid regions. Amer. Inst.Real Estate Appraisers Jour.8(4):348-354,illus. Oct.1940. 282.8 Am3
Sets forth the principal factors which the appraiser of alfalfa lands should consider in his analysis of each farm investigated.

Farm Forestry

Harper,F.B. They farm the forests. Wash.Farmer 65(14):363. July 4, 1940. 6 R151
"Here is the story of a group of Snohomish county farmers who have banded themselves together to do as a unit what they could not do individually - market the timber products from the uncultivated parts of their farms.
"Under their plan of management,timber land that would otherwise have little or no productive value is expected to yield forest products to the value of about $7.50 per acre per year - every year."

Lloyd,W.A. Cooperative rural forestry projects[in California]. Timberman 41(6):66,68,illus. Apr.1940. 99.81 T484

Farm Planning

Aderhold,O.C. A new approach to training leaders in farm planning[in Georgia]. U.S.Soil Conserv.Serv.,Soil Conserv.6(4):107-110,illus. Oct.1940. 1.6 So3S

Fertilizers

Adams,J.E.,Jordan,H.V.,and Jenkins,P.M. The response to fertilizers of soils of the Blackland prairie section of Texas as determined by the triangle system. Amer.Soc.Agron.Jour.32(9):657-663,illus. Sept. 1940. 4 Am34P
"Literature cited,"p.663.
"The effects of fertilizers on the production of cotton are reported for 20 experiments on Houston black clay soil,9 on Hunt clay,and 6 on Wilson clay loam...
"The study shows gradients in fertility and response to fertilizers as one changes from Houston to Hunt to Wilson soils.The triangle system has been particularly effective in obtaining orienting information concerning the fertilizer needs of the soils of the section.The Latin square and other approved field experimental designs have been used since 1935 to test the fertilizers indicated by the triangle experiments as of greatest importance for an understanding of the fertility of these soils.The data confirm those secured by the triangle system."

Bennett,H.H. The use of fertilizers in soil conservation. Better Crops with Plant Food 24(7):6-9,illus. Aug.-Sept.1940. 6 B46
Fig.I. Average annual soil and water losses as affected by applications of lime and fertilizer,from 8 percent slope of sholby silt loam at Bethany,Mo.

Floods and Flood Control

Diebold,C.H. Strip planting for flood control. Jour.Forestry 38(10): 810-812,illus. Oct.1940. 99.8 F768

"Floods have caused tremendous damage in the territory represented by the Allegheny Section of the Society of American Foresters.For example,the March 1936 flood in Pennsylvania alone caused physical and direct flood losses estimated at 212 million dollars.Although man cannot prevent floods such as that of March 1936,he can,to a great extent, take measures to minimize their effects."

Condensed from a paper presented at the winter meeting of the Allegheny section of the Society of American foresters,York,Pa.,March 1,1940.

Headwater flood control begins at Los Angeles. Engin.News-Rec.125(17): 521. Oct.24,1940. 290.8 En34

"The first project for the reduction of flood flows through retardation of runoff at the headwaters of streams is to be started immediately in the Arroyo Seco near Los Angeles.The department was authorized to undertake this work by the Omnibus Flood Control Act of 1938.Expenditure of $1,410,000 on Los Angeles work has been approved.

"Work called for under the project includes:installation of improved fire-control facilities in the mountain uplands to prevent loss of protective cover and to reduce intense runoff and soil movement from fire-stripped lands;vegetable cover improvement to increase the water retarding ability of uplands,and restoration of cover on burned-over areas;mountain channel improvement,including barriers,revetments deflectors,and revegetation of slopes and land slides;farmland improvement through installation of soil and water conserving practices such as contour cultivation,terraces,cover crops,soil-saving rotations,tree-planting and improvements in range and pasture management;and stabilization of road cuts and fills."

Entire article quoted.

Nicol,J.M. Complete flood protection--- A suggested program. West. Construct.News 15(8):281-282. Aug.1940. 290.8 W522

"A Suggested Program For Flood Control:Recognize the seriousness of the situation;Declare flooded areas to be of national interest and place them under Federal control;Provide funds by loans against lands in Federally-controlled flood districts;Prepare and distribute immediately maps showing danger areas and escape routes;Plan and effect development of erosion reducing system in upland above flood areas; Equalize distribution of flood waters by constructing a series of check dams near stream sources;Reserve large areas of lowlands for alternate constructional deposition of flood debris;Establish a system of raised ways for transportation and communication and establish raised mounds for habitation in flood areas;Prohibit further development on low ground and continue normal development of present levee system for immediate protection."

Ruff,C.F. Maximum probable floods on Pennsylvania streams. Amer.Soc. Civ.Engin.Proc.66(7):1239-1276,illus. Sept.1940. 290.9 Am3P

"A method with supporting data,for estimating the maximum probable flood from drainage areas of 100 to 6,000 sq.miles is presented in this

paper.A maximum storm is derived for various seasons and regions of the state from a study of the records of past storms in Eastern United States.The flood hydrographs caused by 100% runoff from this storm on various sizes of a standard watershed are estimated,and means are developed for correcting these hydrographs to give the corresponding flow from an actual watershed.

"A comparison of the maximum flood peaks derived from the storm data with the largest recorded past floods shows a general agreement.Although no frequency is assigned to the flood developed,the basis on which it is derived indicates that such floods must be very rare on any one watershed,and are unlikely to be exceeded.

"Although made primarily for Pennsylvania streams,several features of the method are generally applicable.The data used cover a large part of Northeastern United States so that,with modifications required by the locality,they should prove useful in other eastern states."

Woodbury,H.J. Flood control in New England. Mil.Engin.32(186):397-405,illus. Nov.-Dec.1940. 290.9 Un3

Describes surveys,studies and work in progress by the Army engineers as a result of the Flood Control Act of June 22,1936.

Flow of Water

Childs,E.C. Recording water-flow meter. Jour.Sci.Instruments 17(4):93-94. Apr.1940. 297.8 J82

A description is given of a recording meter of simple design,particularly suited for recording the instantaneous rate of flow of water from the outfall pipes of agricultural drainage systems.Two ranges have so far been constructed,with reasonable linearity of scale,dealing with rates of flow up to about 40 l./min. A record of the water flow from a mole drain in heavy land is shown,illustrating the need for such a recorder in many drainage experiments.

Jaeger,C. Equations of flow of water over a mobile bed. [Paris]Acad. des Sci.Compt.Rend.210(13):472-474. Mar.27,1940. 505 P21

"The author,in a previous paper(Wasserkraft u.Wasserwirtschaft,1939, Nos.23-24,p.269),found that,contrary to the conclusion of Veronese, the empirical formula for the erosion of a bed by a stream of water does conform with Froude's law of similitude.This conclusion is now confirmed,and it is suggested that the law proposed by Meyer-Peter, Favre and Einstein relating to the transport of solids possesses the characters of a physical law." Abs.Sci.Abs.43(509):379. May 25,1940.

Grasses and Grassland

Cardon,P.V. For a grassland agriculture.A professional outlook on one of the most important trends of the century. Natl.Seedsman 7(4):18-19, 38,illus. Oct.1940. 61.8 N21

Cook,Lynette. Grass burning. So.African Jour.Sci.36:270-282. Dec. 1939. 515 So84

References.

"Leaving plots unburnt for several yrs.affected the soil moisture

content most during the dry winter months,when it was higher than in the burnt plots,but toward the end of summer,when the cover was good in all the plots there was very little difference.The effect of fire on the pH,total sol.salts,amt.of org.matter and colloids over a period of 6 yrs.was very small or nil.There was a slight loss of N on the burnt plots.Firing resulted in a certain amt.of change in the compn.of the soil as indicated by the appreciable drop in the max. water-holding capacity of the soil.The improved pasturage derived from burning outweighed the losses caused by fires in deterioration of soil compn.The actual temp.of the burn did little harm if the fire took place during the winter. J.R.Adams." Abs.Chem.Abs.34(20):7055. Oct.20,1940.

Grass is on its way back. Farmer-Stockman 53(19):458,illus. Oct.1, 1940. 6 Ok45
Summary of research experiments reported at the grassland conference at Amarillo,Texas,September 5 and 6,sponsored by the Southern great plains regional council.Among those reporting were S.H.Watson,D.A. Savage,P.E.Neale,W.G.McGinnies,and C.R.Enlow.

Griffith,D.E. The collection and processing of buffalo-grass seed. U.S.Soil Conserv.Serv.,Soil Conserv.6(5):132-133,illus. Nov.1940. 1.6 So3S

M'Dougal,A.R. Some practical experiences of grassland improvement. Scot.Jour.Agr.23(1):24-30. July 1940. 10 Sc82S
Delivered at Conference on Grassland Improvement,Edinburgh,April 9-11, 1940.

McKay,Grif. Green gold. Farm Jour.64(8):18,illus. Sept.1940. 6 F2212
The "farm spotlight[is now turned] on grass as a source of strength for agriculture".Cites an example in Pope county,Illinois where hilly land,badly eroded,which raised nothing but weeds and sassafras brush a few years ago,now produces sleek,grass-fed cattle.

Morris,J.J. The steekgrass problem. Farming in So.Africa 15(167):71-72. Feb.1940. 24 So842
"A discussion of management to encourage the growth of better grasses. Steekgrass(Aristida congesta) is a pioneer type in areas of low rainfall and tends to thrive unless better grasses are encouraged by management which is discussed." Abs.Imp.Bur.Soil Sci.Soils and Fert.3(3): 131. 1940.

Rohrbeck,E.H. Northeasterners "talk" grass.Say scientific attack on problem will usher in era of increased livestock farming. Amer.Hereford Jour.31(8):66. Aug.15,1940. 43.8 Am32
Summarizes remarks made at Northeastern regional grassland conference by C.E.Ladd,P.V.Cardon,J.W.White,R.J.Garber,C.R.Enlow,C.J.Brank and F.V. Grau.

Sheets,E.W. Swing back to grass. Better Crops with Plant Food 24(8): 6-9,43-46,illus. Oct.1940. 6 B46
"This is the first of a series of three articles by Dr.Sheets who was formerly Chief of Animal Husbandry in the U.S.Department of Agriculture. It starts with the history of soil erosion in this country,beginning

with the Indians and coming up to the present time.

Tjaden,Wayne. Grass grows greener. Kans.Farmer 77(20):12,illus. Oct.5,1940. 6 K13
Accomplishments of the grassland program in Kansas.

Witt,W.H. Re-establishing buffalo grass. Farm and Ranch 59(5):32-33, illus. May 1940. 6 T31

Great Plains

O'Brien,H.R. Bigger farms for fewer men. Throughout the Great Plains this momentous change is now under way. Country Gent.110(11):14, 32-33,illus. Nov.1940. 6 C833

O'Brien,H.R.and Throckmorton,R.I. Our changing farm map.The Great Plains gives us a story of triumph over many difficulties. Country Gent.110(10):7-8,26-27,illus. Oct.1940. 6 C833
"The Great Plains is learning to live and farm under changed conditions."This article tells of soil conserving methods of working the land and keeping it in place,of conserving and reinforcing the slender water supply,a trend toward larger land-holdings and better-balanced farm operations,new crops,new varieties,new tools and new knowledge.

Gullies

Mitchell,R.H. Some additional observations on slumping and gully formation. Science 92(2391):378-379. Oct.25,1940. 470 Sci2
Reports on difference in conditions under which slumping took place in 1936 and again in 1940 at Flag Pole Hill,on the campus of Muskingum College in New Concord,Ohio,as to rainfall and cover.The writer concludes that grass and small trees"were not sufficient protection against slumping when the condition of saturation was reached".

Highway Erosion Control

Controlling erosion on fill slopes of new four-lane divided highway at New London,Connecticut.State highway department installs treated timber rail at shoulder edge and lines shallow ditch 1 ft.wide with 2 in. of bituminous material shoveled from suspended platform at back of truck and spread and tamped to form a gutter leading to drop inlets. Construct.Methods 22(10):61. Oct.1940. 290.8 Sul

Texas regrades slopes to stop wind erosion;backsloping,mulch sodding and seeding tried out by State highway department to control erosion along highways. Contractors and Engin.Monthly 37(10):39. Oct.1940. 290.8 C765

Tilton,G.A.,jr. Bank protection in California. Better Roads 10(5):23-26. May 1940. 288.8 B463
Review of California practice in construction of rock and concrete revetments,also fencing,for prevention of erosion and flood damage to road banks;notes on principal types of such construction,including cost data.

Implements and Machinery

Lord,Russell. Field notes from the South. Country Life[Garden City, N.Y.]78(3):28,illus. July 1940. 80 C832
In this continuation of his series called "Soil and Man" Mr.Lord writes about the grade meter,"a new sort of compass for tractors" invented by L.H.Schoenleber and associates at Clarinda,Iowa which "may become a standard part of tractor equipment as the practice of plowing on the contour spreads."He also writes of "signs of an agricultural renovation[which]greatly outnumber signs of desolation in our Old South today".

New tillage practices. Mont.Farmer 28(1):3. Sept.1,1940. 6 M764
"A new variety of tillage practices involving the use of three comparatively new implements are being demonstrated on some 300 acres of the Power Dutton project of the Soil conservation service...
"The three tillage implements with which most of the demonstrational work is being carried on are a blade cultivator,a sub-surface tiller and an ordinary tiller with blade type sweeps instead of shovel type - interchangeable duckfoot and deep tillage shovels."

Newman,Ellen. Concerning soil conservation.What can farm equipment dealers do about it? Farm Impl.News 61(17):18-19. Aug.22,1940. 58.8 F2

Irrigation and Drainage

Cox,P.W. Government grants to assist land drainage schemes[Gt.Britain]. Chartered Surveyors' Inst.Jour.19(10):775-783. June 1940. 282.9 C38J
These grants to assist land drainage schemes are discussed as they may be carried out under the Land Drainage Act,1930 - Section 55, the Agriculture Act,1937 - Part III,and the Agriculture(Miscellaneous War Provisions)Act,1940 - Part III.

Jacoby,C.E. The rehabilitation of drainage systems. Agr.Engin.21(10): 389-390,392,illus. Oct.1940. 58.8 Ag83
Presented before the Soil and water conservation division at the fall meeting of the American society of agricultural engineers at Chicago,Ill.,December 7,1939.

Landing field drainage practice. Engin.News Rec.125(17):[547]-548,illus. Oct.24,1940. 290.8 En34
Cites varied methods for draining U.S.Army airfields in several different locations.

Lyman,R.J. Idaho project - a plan to develop irrigation and power on the Snake[river]. West.Construct.News 15(6):207-210,illus. June 1940. 290.8 W522
Table gives data on water supply,irrigation and power.

McIntyre,H.H. Artificial rain. Small irrigation projects,hundreds of them,are appearing in Saskatchewan. Country Guide 59(10):10,31,illus. Oct.1940. 7 G76

Mados,László. The qualifications of irrigation waters. Mezőgazdasagi Kutatasok 13(5):121-131,illus. 1940. 19 M57
In Hungarian.
"An ideal water for irrigating purposes should not contain more than 5-6 mg. equiv.total salts per l.;Na salts should not exceed 30 equiv.%.Na bound to carbonic acid should be absent.Certain divergencies from this ideal must be allowed,especially when the undisturbed downward percolation of the water is not prevented by impermeable soil layers or by the high level of the subsoil waters. S.S. de Finály"
Abs.Chem.Abs.34(20):7053. Oct.20,1940.

Page,J.C. The broad view of reclamation.National wealth vastly increased in last four decades by federal irrigation program. Civ.Engin.10(10): 615-618,illus. Oct.1940. 290.8 C49
"After 38 years of work under the federal Reclamation Act it is fitting to take stock of the progress that has been made in national reclamation. The primary purpose of this act was the establishment of farms and homes,and today the existence of some 70,000 irrigated farms and 258 towns on federal projects bears witness to the fact that this purpose is being realized.The social and economic bases of the program are here discussed by Commissioner Page,in a paper which was originally presented before the Society at its 1940 Annual Convention in Denver,Colo."

Stewart,G.R. Conservation in pueblo agriculture. II.Present-day flood water irrigation. Sci.Monthly 51(4):329-340,illus. Oct.1940. 470 Sci23

Land Management and Utilization

Albaugh,Reuben. Proper land use is big problem. Calif.Cult.87(20): 538. Oct.5,1940. 6 C12
Cites several cases in California as examples of the complexity of the problem of getting misused land into proper crops that will prevent erosion,build up fertility and at the same time reduce production costs and increase net returns.

Davis,K.S. Pioneers - 1939 model. Better Crops with Plant Food 24(7): 13-16,42-44,illus. Aug.-Sept.1940. 6 B46
Relates past history and present conditions in the "big bog" area of Minnesota.
"Nature has been given a chance.Men have been given a chance.Throughout the north country today we see man and nature working together, supplementing each other,supporting each other.Out of the chaos of haphazard settlement and exploitation,order,based on wise land use,is emerging.Zoning ordinances will prevent a repetition of former mistakes. It's a country,now,with a future!"

How land-use planning operates in Oklahoma. Okla.Agr.Expt.Sta.,Current Farm Econ.13(4):83-89. Aug.1940. 100 Ok4

Selby,H.E. How many acres do we require? U.S.Bur.Agr.Econ.,Land Policy Rev.3(5):8-11. Sept.1940. 1 Ec 7La
"Our farm problems would be much simpler if we could say that we need so many farmers on so many farms of so many acres.We cannot;a maze of

factors and uncertainties complicate the subject:Crop failures,exports, mechanization,changes in diets,technological use of farm goods.These are examined here in the light of debates on the value of land reclamation."

Wilson,L.S. Some notes on the growth of population in Minnesota. Geogr. Rev.30(4):660-664,maps. Oct.1940. 500 Am35G
Indicates association between land use and population.

Maps and Mapping

Cude,W.C. Planimetric mapping in the Soil Conservation Service. Photogrammetric Engin.6(3):131-135. July/Aug./Sept.1940. 325.8 P56

Jensen,H.A. Vegetation type maps of California and western Nevada. Science 92(2389):333. Oct.11,1940. 470 Sci2
Describes natural vegetation maps prepared by Forest Survey Division, California Forest and Range Experiment Station.

Rainfall and Precipitation

Kennison,H.F. Sixty-year rainfall record analyzed. Civ.Engin.10(11): 709-710,illus. Nov.1940. 290.8 C49
"Results of calculations differ somewhat from those secured ten years ago using 50-year record of same gage at Boston."

Range and Pasture Management

Canfield,R.H. Maximum range utilization.Maintain a balance between summer and winter forage on black grama ranges. Amer.Hereford Jour. 31(10):56-57,illus. Sept.15,1940. 43.8 Am32

Dismuke,Dewey. Acoma and Laguna Indians[in New Mexico]adjust their livestock to their range. U.S.Soil Conserv.Serv.,Soil Conserv.6(5): 130-131,illus. Nov.1940. 1.6 So3S

Hochmuth,H.R.and Franklin,E.R. Sheep migrate,too,to follow the grass. U.S.Bur.Agr.Econ.,Land Policy Rev.3(5):12-19,illus. Sept.1940. 1 Ec7La
"In spring and fall, 6,500,000 sheep move to and from range lands.In their long treks they lose strength,cause higher operating costs,undergo hazards of climate and mountain trails,and subject a large area to one of the severest known land uses.Improvements are suggested in this article,part of a larger study concerning use and relationship of seasonal sheep ranges in the Intermountain West."

Humphrey,R.R. The use of forage-acre requirements in range surveys. Amer.Soc.Agron.Jour.32(10):754-760. Oct.1940. 4 Am34P

Pechanec,J.F.and Stewart,George. Sagebrush-grass range sampling studies: size and structure of sampling unit. Amer.Soc.Agron.Jour.32(9):669-682, illus. Sept.1940. 4 Am34P
"Literature cited,"p.682.
"Some problems involved in sampling of native sagebrush-grass range

areas were studied at the U.S.Sheep Experiment Station,Dubois,Idaho. On a block of native range 3/8 acre in area,the herbage of arrowleaf balsamroot(Balsamorhiza sagittata) and tapertip hawksbeard(Crepis acuminata)was harvested.The area was subdivided into 640 5 by 5 foot plots and the weight of air-dry herbage of each species recorded for each plot.This information was used in testing the efficiency of various sampling unit sizes and shapes and in exploring the influence of subdivision of sampling upon accuracy of the sample."

Run-off

Putnam,W.C.and Sharp,R.P. Landslides and earthflows near Ventura, Southern California. Geogr.Rev.30(4):591-600,illus. Oct.1940. 500 Am35G
"Runoff and other phenomena associated with heavy rains during the winter of 1937-1938 produced many significant changes in the landscape of southern California.The rainfall was especially heavy in the period February 28-March 3,1938,when 7½ inches of rain fell;at Ventura 4 inches fell in 24 hours on March 2 and 3.Landslides were set in motion and great quantities of material in areas of weathered bedrock were moved by earthflows.The Ventura slides are unusually interesting for their effect on human activities and are especially important in the oil field,where they have destroyed wells,buckled pipe lines,and shifted roads."

Vorster,J.A. The rational method of determining maximum run-off. Farming in So.Africa 15(173):299-303,illus. Aug.1940. 24 So842
"Literature,"p.303.

Sedimentation and Silt

Vetter,C.P. Technical aspects of the silt problem on the Colorado River. Civ.Engin.10(11):698-701,illus. Nov.1940. 290.8 C49
"Handling the silt brought into canals by the water from the Colorado River was long a major operating problem of the Imperial Irrigation District in California.With the completion of the All-American Canal and the gigantic desilting works at its head,however,that problem is now solved.Mr.Vetter here discusses the research and theory on which the design of those desilting works was based.The studies undertaken dealt with the broad subject of the mechanics of silt transportation and with effects of the Boulder and Parker dams on the silt content downstream.Design principles for the works themselves are also discussed, with instructive reference to preliminary designs that were investigated and found wanting.The article is abridged from a paper presented before the Hydraulics Division at the 1940 Annual Convention of the Society in Denver."

Soil Aggregation

Elson,Jesse and Lutz,J.F. Factors affecting aggregation of Cecil soils and effect of aggregation on run-off and erosion. Soil Sci.50(4):265-275,illus. Oct.1940. 56.8 So3
"References,"pp.274-275.
"The results of investigations on Cecil soils,which are lateritic,

seem to warrant the following conclusions:

Good aggregation is beneficial in reducing runoff and erosion.

The condition of the organic matter is more important than the total amount in causing aggregation. Soils of the Cecil series are better aggregated when the humus is combined with hydrogen or sesquioxides than when combined with calcium or magnesium.

Liming decreased the aggregation of the soil of the Fertility Station plots in all but one case. This exception was explained as a residual effect of the original acid humus.

A 4-year crop rotation which included lespedeza gave better aggregation on plots 5 and 6 of the Conservation Station soil than did continuous sod of shallow-rooted grasses.

Continuous cultivation of cotton on plot 10 of the Conservation Station resulted in a significant decrease in aggregation."

Myers, H.E. and Jones H.E. Solution concentration as a possible factor influencing soil aggregation. Amer. Soc. Agron. Jour. 32(9):664-668, illus. Sept. 1940. 4 Am34P

"Literature cited," p.668.

Materials and methods; synthesis of aggregates; and stability of natural soil aggregates are reported in a discussion of experiments carried out at the University of Missouri in order to investigate the influence of salts at greater concentrations on aggregate formation and stability.

"The data presented suggest that the direct effect of both sucrose and calcium nitrate at the concentrations of 500 to 2,000 p.p.m. is to cause no significant improvement either in the synthesis of aggregates or in the stability of naturally occurring soil aggregates. This does not preclude the possibility of an indirect favorable effect as a result of stimulated plant growth or increased microbial activity over a longer period of time."

## Soil Conservation

Bally, W. Different aspects of soil conservation possibilities of international collaboration. Internatl. Inst. Agr., Monthly Bul. Agr. Sci. and Pract. 31(9):295T-309T. Sept. 1940. 241 In82

"Publications consulted," p.309T.

"The chief problems of soil conservation are noted and briefly discussed. These problems vary considerably in different parts of the globe. The various aspects are treated and the suggestion is put forward that, through the intermediary of the International Institute of Agriculture, international collaboration on this important question should be attained."

Bennett, H.H. Thirty years of vertical farming. U.S. Soil Conserv. Serv., Soil Conserv. 6(5):113-115, 122, illus. Nov. 1940. 1.6 So3S

What vertical farming of potatoes has done to the land of Aroostook county, Maine in 30 years time and suggestions for its improvement through soil conserving practices.

Best, A.L. Farmers practice soil conservation. Conn. Woodlands 5(3): 39-40. Sept. 1940. 99.8 C76

Written by project manager, Scantic river erosion control demonstration project, Connecticut.

Bump, Gardiner. The Four Horsemen of conservation. Amer. Wildlife 29(5):242-244. Sept./Oct.1940. 412.9 Am32

"These, then, are the horses we as conservationists are riding. Grouped for ready reference, they are: 1. Protection of the seed stock and control of the harvest; 2. Propagation, either natural or artificial. Here we may include the operation of game farms and the restocking of coverts with wild-trapped species; 3. Research (the lead horse); 4. Education, to furnish the motive and inspiration for understanding action."

Daniels, Jonathan. A native at large. Nation 151(9):174. 110 N

"In a small voice which I wish were much louder I would like to say that while we move, and properly, to be ready to defend this land, we are already forgetting the land we defend. I mean the land - the actual earth out of which our food grows and our forests, which is at least as much America as the people on it...

"Nobody expects as much excitement now over a gully as over a gun. Certainly conservation is not competing with preparedness. But it is time people began to realize that conservation is a part of preparedness...

"Modern war has taught us new lessons in military equipment. It must, if we are to be secure, also teach the absolute necessity of new intelligence and energy against the old waste of the land. In this crisis the friends of the land are the best friends of American security. Even more than peace, war would need the staffs and skills they have designed to protect it."

Everson, J.N. Soil conservation and soil supplements. Soil Auger (Mass. Ext. Serv.) 1(3):1-3. Sept.1940. 275.29 M361So

Ferris, J.P. Refrigeration, meat and the soil. Smaller locker plants advocated. Refrig. Engin. 40(3):180, 182. Sept.1940. 295.9 Am32J

Points out fact that "refrigeration for farmers is an important force making for both agricultural diversification and soil conservation.

"...Agricultural leadership says that soil erosion cannot be brought under control unless many of the hillier lands are put into sod and the plow kept off them. It is not easy to develop new cash markets for beef and lamb, but the Southern farm family is hungry for fresh meat. If these farmers can store in refrigerators their own meat for their own consumption, many will put a few acres to grass and add a few head of livestock and much hilly land will be saved from destruction by the plow and erosion."

Ferris, J.P. and Emerson, Howard. Resources and national defense. Choices of raw materials and energy sources in relation to the natural cycle. Mech. Engin. [New York] 62(11):809-812, illus. Nov.1940. 291.9 Am3J

Includes a discussion of energy from soils with the following suggestion: "Use phosphorus and lime with legumes as a means of getting much greater quantities of nitrogen, carbon, and hydrogen from air and water to produce cellulose, starches, fats, and proteins; learn to grow energy and raw materials for industry on the farm without depleting the soil."

He saves the rain. Farm and Ranch 59(6):26,illus. June 1940. 6 T31
"W.B.McQueen,pioneer farmer in the Memphis,Texas,area,didn't think much of soil conservation practices when the Soil Conservation Service CCC camp was established in that community in 1935.In 1938 when he produced only 53½ bales of cotton on 386 acres,while other farmers who were using conservation practices had yields as high as a third of a bale to the acre,he decided that it is necessary to conserve all available water in order to carry out a successful farming program in this semi-arid section."

Mackaye,Benton. "Defense Time" conservation. Amer.Inst.Planners' Jour.6(3):71-76. July-Sept.1940. 98.58 P692
Recommends a combination within each region of the United States of a construction and a conservation program geared to national defense. Reviews briefly developments involving "a basic yet urgent conservation of land and water resources,embracing especially the subjects of the river basin working unit,of flood plain population,of land use practices,of state and local action,of the time limit".

Space,R.S. Some slants on forestry and soil conservation. Northwest Sci.14(1):14-16. Feb.1940. 470 N81

Whitaker,J.R. World view of destruction and conservation of natural resources. Assoc.Amer.Geog.Ann.30(3):143-162. Sept.1940. 500 As73
"The record of destructive and conservative use of natural resources is being written on many fronts.Much less attention has been given, quite naturally,to the ideas and methods of the men who have assumed the responsibility for preparing that record.An evaluation,for the period 1864-1938,of portions of this written record is the immediate aim of this essay.In tracing the history of ideas regarding resource destruction and conservation,I start with George P.Marsh,and follow one line of his intellectual descendants.This critique is limited to the writings of men who dealt with the problem,as he did,from a world point of view.Because each of these writers depended on scores of investigators for the primary data and ideas on which to base his generalizations,this study is,perforce,more than a review of the work of a few men.It aims,instead,at a somewhat comprehensive grasp of the history of thought on resource destruction and conservation as a phase of human occupance of the earth as a whole,and,as a means to that end,samples the best of the pertinent geographic literature published within the last century."
Early writers on the subject referred to besides George P.Marsh, are Élisée Reclus,A.Woeikof,Ernst Friedrich,and Jean Brunhes.

Soil Conservation. Economic Aspects.

Maits,C.B.,jr. Does erosion control pay? New England Homestead 113(15): 5,illus. July 27,1940. 6 N442
"From the account books of a chemical engineer,who uses his knowledge of chemistry to grow bumper crops of vegetables for Boston markets, comes the first complete story of the cash value of soil conservation work to New England farmers."

Sauer,E.L. Farm account records and surveys indicate financial benefits of soil conservation practices. Ill.Farm Econ.no.63, pp.387-394,illus. Aug.1940. 275.28 Il5

"Summary. Farm account record studies on 250 farms in the Edwardsville, LeRoy,and Freeport Soil Conservation Areas for 1939 revealed that a well-planned conservation program,which embodies the best physical and economic use of each acre of the farm,is paying dividends for farmers cooperating in the soil-conservation and erosion-control program in these areas.Although the conservation cooperators had farm plans which were still in a transition stage,their average incomes were higher than were those on the noncooperating farms.With the better land use and greater emphasis on soil conservation and soil improvement,the incomes on the cooperating farms should increase in relation to those on the noncooperating farms as time passes and as the farm business becomes adjusted to the increased production of erosion-control and soil improvement crops.In the meantime,these conservation cooperating farms are maintaining their soil resources as a heritage for future generations."

Tucker,E.A.and Nelson,Peter. Does a program of conservation interfere with farm operations? Okla.Agr.Expt.Sta.,Current Farm Econ.13(5):130-135,illus. Oct.1940. 100 Ok4

"Investigations to determine the economic effects of a planned program of soil and water conservation,in progress since 1937 in Payne and Muskogee counties,have yielded results to date supporting the following general conclusions: (1) In the conservation program,farms cooperating and accepting conservation practices are those that can do so without making major changes in the kinds and amounts of crops and livestock produced.(2)Crop yields and farm incomes have not been decreased on the cooperating farms.(3)No increased time is required to perform farm operations on land where soil- and water-saving structures and practices are in use."

Soil Conservation. Study and Teaching.

Caldwell,J.C. Taking conservation to the children. Amer.Forests 46(10): 454-456,illus. Oct.1940. 99.8 F762

"A unique program of conservation activities" in Van Buren county,Tenn.

Charles,F.E. Tar hollow conservation-teaching laboratory. U.S.Soil Conserv.Serv.,Soil Conserv.6(4):104-106,illus. Oct.1940. 1.6 So3S

Dale,Tom. Soil conservation in elementary and secondary schools. U.S. Soil Conserv.Serv.,Soil Conserv.6(4):101-102. Oct.1940. 1.6 So3S

Friedrich,G.W. Conservation education. Minn.Dept.Conserv.,Conserv. Volunteer 1(1):6-9. Oct.1940. 279.8 C765

Grace,C.W. The curriculum and soil conservation. U.S.Soil Conserv. Serv.,Soil Conserv.6(4):96-97,106,illus. Oct.1940. 1.6 So3S

The Mayville experiment as described by the president of State Teachers College,Mayville,N.D.

Harper,F.B. Cheney laboratory school. U.S.Soil Conserv.Serv.,Soil Conserv.6(4):112,illus. Oct.1940. 1.6 So3S

Harper,F.B.and Johnson,C.C. Summer planning for winter studies. U.S. Soil Conserv.Serv.,Soil Conserv.6(4):105-106. Oct.1940. 1.6 So3S

John,W.W. Schools teach lessons from the land. U.S.Soil Conserv.Serv., Soil Conserv.6(4):102-103. Oct.1940. 1.6 So3S

Myers,E.E. Art and soil conservation. School Arts 40(2):44-[47],illus. Oct.1940. 317.8 Sch6
Article by the Director of Art Education,State Teachers College, Mayville,N.D.

Raymond,Anne. The land as a textbook. U.S.Soil Conserv.Serv.,Soil Conserv.6(4):98-100,illus. Oct.1940. 1.6 So3S
Based on material presented in a talk before the Pacific Northwest Resources and Education Workshops Conference in July 1940.

Seguin,Hazel. Art and conservation. School Arts 40(2):38. Oct. 1940. 317.8 Sch6
The writer,who is associated with State Teachers College,Superior, Wisconsin,states her concept of conservation which implies the best use of land and the policies by which this may be brought out;that conservation in all its aspects is a pertinent field for study for all young people."Let us develop an attitude[she says]which is the embodiment of the true conservation,in the children of today so they in turn will bring about conditions by which our natural resources will be saved for posterity.There is a great need for art teachers who are conservation minded and who,through art,will help to develop this attitude in their students."

Strong,H.M. National resources and the workshop idea. U.S.Soil Conserv. Serv.,Soil Conserv.6(4):94-95. Oct.1940. 1.6 So3S

Tappan,J.B. Land use and the modern school. U.S.Soil Conserv.Serv., Soil Conserv.6(4):88-90,illus. Oct.1940. 1.6 So3S

Vessel,M.F. On teaching conservation. Natl.Ed.Assoc.U.S.Jour.29(7): 219. Oct.1940. 275.9 N21J

Soil Conservation Districts

Clark,N.M. Soil saving goes local.In more than 300 districts,scattered over 38 states,farmers are taking charge of conservation practices. Country Gent.110(11):10-11,36-37,illus. Nov.1940. 6 C833
Illustrations show "1.Strip-cropping and contour cultivation in Texas; 2.The new methods are tried in Grant County,Wisconsin;3.A slope in Clayton County,Iowa,suffered heavy soil losses until it was handled this way;4.An Ohio test of a five-year strip-crop rotation,using corn, oats,wheat and meadow;5.The buffer strip on this Page County,Iowa, farm is composed of alfalfa,red clover,brome and timothy;6.A grassed waterway between corn and oats in Stephenson County,Illinois;7.An

Arkansas farmer protects a sloping pasture with contour ridges,sodding them with Bermuda grass."

Erosion control importance seen.Change in farming methods emphasized in Sheridan county report.Reserve Soil conservation district publishes first semi-annual report,indicating farmers' changing attitude. Rocky Mountain Husbandman 64(34):[6]. Aug.29,1940.
"The first semi-annual report of the reserve soil conservation district,which comprises 82,120 acres in Sheridan county,with a total of 94 land operators,indicates a healthy and vigorous organization.The report states, 'Progressive farmers in this area have realized for some time that in order to maintain the productivity of their soils,a modification of the farming system now in common use should be instigated."

Reuss,T.E.and others. To promote the general welfare. U.S.Soil Conserv. Serv.,Soil Conserv.6(5):119-121,128. Nov.1940. 1.6 So3S
The directors of the Shiloh-O'Fallon(Illinois) soil conservation district describe their plan for acquainting farmers with the extent of erosion,the effects of it,and methods of controlling it by means of "textbook"farms.

They moved the fences to save the soil. Farmer-Stockman 53(19):457, illus. Oct.1,1940. 6 Ok45
Accomplishments of the Arkansas-Verdigris soil conservation district in northeastern Oklahoma.

## Soil Erosion and Control

Bradley,W.H. Pediments and pedestals in miniature. Jour.Geomorph.3(3): 244-255,illus. Oct.1940. 331.8 J82
"Observation of the badland pediments cut in the soft mudstone of the Bridger formation[Wyoming]has led me to conclude that they are carved and brought to a high state of perfection by the combined action of unconcentrated rill wash and pelting rain within a narrow zone at the foot of the retreating badland escarpments.Thereafter their gradients are gradually lowered by sheetflood erosion and integrated into an extensive surface.Sheetflood erosion is a coarse tool that destroys the satin smoothness given the surface by unconcentrated rill wash and rain and leaves it scored and littered.The pediment surface,once formed, serves as a graded shelf across which debris from the wasting hills is transported.Basinward,streams take over this function of transport on gradients cut below the pediment.Their work in these areas where the baselevel is being gradually lowered appears to be destroying rather than creating pediments."

Erosion no idle threat. The Furrow 45:8. Sept./Oct.1940. 6 F98
Indicates reasons both economic and social,for soil conservation. "Chemurgy offers another reason for soil conservation...Through chemurgy,products of agriculture are being used for more and more purposes other than food.New outlets are appearing adding to the value and utility of the soil as a national asset."

Kucinski,K.J. Soil erosion in Massachusetts. Soil Auger(Mass.Ext. Serv.)1(3):3-4. Sept.1940. 275.29 M381So

Soil Erosion and Control. Foreign Countries.

Breadon,G.W.D. Note on terracing for soil conservation and land reclamation[in India]. Indian Forester 66(8):485-492,illus. Aug.1940. 99.8 In2

Breadon,G.W.D. Soil conservation by terracing and grading[in India]. Indian Forester 66(7):430-435,illus. July 1940. 99.8 In2

Bullock,MacCallum. Fighting the little waters[in Ontario].The problem of conserving the soil and water now flowing unchecked to the lakes and sea. Farmer's Mag.37(9):8,30-31,illus. Sept.1940. 7 C165
Refers to "the first definite water conservation study of the Ontario Department of Lands and Forests.It includes 34% of the Wilmot Creek drainage unit.

Cuni,L. The fixation of pliocene ravines.(La fijacion de los carcavones pliocenicos). Agr.Madrid 9(94):62-65. Feb.1940. 15 Ag84
In Italian.
Account of Italian soil conservation methods,with special reference to the damming of gullies.

Flemmich,C.O. History of shifting cultivation in Brunei 1906-1939. Malayan Forester 9(1):12-18. Jan.1940. 99.8 M292
"An account of the system,known as tebasan,and of the measures taken to control it.Tebasan is applied to the cultivation of hill rice and if not controlled results in damage to forests and soil." Abs.Imp.Bur. Sci.,Soils and Fert.3(5):240. 1940.

Good crops on little rain.Dry farming doubles yield in famine area. Indian Farming 1(1):29-31,illus. Jan.1940. 22 In283
Tells of work at five research stations in India supervised and coordinated by a special Dry Farming Committee appointed by the Imperial Council of Agricultural Research which consists of three main lines, viz.the conservation of moisture,the study and improvement of soil conditions,and the study of plant growth.
As a net result of studies,a definite practice has been evolved in Bombay the prominent features being as follows:"(1)Ploughing the land with a turn-wrest plough at least once in three years in medium and deep soils(2)Bunding or terracing the land and division into compartments to allow rain water to move only under controlled conditions. (3)Addition of cattle manure at the rate of five cartloads per acre or burying a green crop of sann(Crotolaria juncea)every year.(4)Repeated harrowings(four or five)during the monsoon months before sowing.This conserves soil moisture and destroys weeds.(5)Sowing with a moderate seed rate of 4 to 5 lb.per acre with a wider drill so as to keep a distance of 18 in. between rows(6)Repeated stirring of the surface soil (four times)by bullock-hoes worked between the rows.This also conserves the moisture and destroys weeds."

Gorrie,R.M. Soil erosion and the cultivator's responsibility[in India] Indian Farming 1(5):230-233,illus. May 1940. 22 In283

Hall,T.D. Soil fertility in southern Africa. Roy.African Soc.Jour. 39(155):160-169. Apr.1940. L.C.
The question is discussed in regard to overgrazing and mineral deficiences in soil and herbage.

Huntley-Wilkinson,C. Soil erosion prevention on tea estates. Ceylon Tea Res.Inst.Tea Quart.13(2):59-72. June 1940. 68.18 C33

Napham,A.L. Ditcher-made drains in arable lands. Farming in So. Africa 15(174):341-342,illus. Sept.1940. 24 So842
Instructions for spacing gradients and treatment of contour terraces or "drains" to control sheet erosion in Natal and East Griqualand, South Africa.

Nevros,K. The agricultural problems of Greece. Ernahr.der Pflanze 36(5):51-54. May 1940. 57.8 Er6
In German.
"One of the big problems of Greece is to increase grain production so as to make the country self-sufficient in grains.To do this,cultural practices will have to be improved.This will include better land utilization,better fertilization,improved varieties,and more modern growing practices.Many of the soils have become impoverished from lack of fertilization combined with soil erosion due to a one-crop system of farming and poor soil management.
"The fertilizer problem is complicated by the high lime and iron contents of the soils and periods of drought favoring fixation of the nutrients.Proper placement of seed and fertilizer,and irrigation will help solve these problems.The wheat should be drilled instead of broadcast,especially since this permits the hoeing of the crop,highly necessary under conditions in this country.The more intensive cultivation of grains would permit transferring some of the acreage now devoted to this crop to other important crops,and still increase total grain production.
"About one-fifth of the total area of Greece is under cultivation. Of this area,about two-thirds is in grain,including wheat,rye,corn, rice,and millet,about one-fifth in beans and other legumes,about 3.3% in vegetables, 8.6% in cash crops as tobacco,cotton,spices,etc.,5% in forage crops,and 11% in vineyards of various types.Reforestation of much land should be undertaken,although some progress in this respect already has been made." Better Crops with Plant Food 24(8):35-36. Oct.1940.

Nevros,C.I. Soil erosion in Greece. U.S.Soil Conserv.Serv.,Soil Conserv.6(5):129. Nov.1940. 1.6 So3S

Pendleton,R.L. Soil erosion in the tropics. Jour.Forestry 38(10): 753-762. Oct.1940. 99.8 F768
"Literature cited,"pp.761-762.
Includes information on The Philippine Islands;Siam;China;and India.

Rubber growing in Sumatra. Victoria Dept.Agr.Jour.38(6):295,illus. June 1940. 23 V66J
Illustration shows "clearing and terracing land in Sumatra preparatory to growing rubber".

Walters,M.M. Soil erosion in the Eastern Transvaal. Farming in So. Africa 15(173):297,312,illus. Aug.1940. 24 So842

Weston,P. Soil erosion[in Australia]from a grazier's viewpoint. N.S.Wales Div.Commonwealth Inst.of Valuers.Valuer 6(2):98. Apr.1,1940. BAE
A precis of a Paper read at a meeting of the Victorian Institute of Surveyors.

Y,A.K. Fight against soil erosion in India. Current Sci.[India]9(5): 253-254. May 1940. 475 Sci23

## Soil Microbiology

Vandecaveye,S.C.and Katznelson,H. Microbial activities in soil:VI. Microbial numbers and nature of organic matter in various genetic soil types. Soil Sci.50(4):295-311,illus. Oct.1940. 56.8 So3
"References,"pp.310-311.

## Soil Moisture

Alldis,V.R. Soil moisture as a factor in the prevention of erosion. Past.Rev.8(50):757-758. Aug.16,1940. 23 Au75
Letter to the editor in which it is stated that "immunity from erosional damage,whether by gullying or otherwise,when a sufficiency of vegetal cover is present,either of grass,timber,or other plant, is not due to any mechanical cause as above mentioned but should be credited to a physical one and as such is to be looked for in the realm of soil physics.To be a little more concise,the whole question boils down to one of soil moisture."

Childs,E.C. The use of soil moisture characteristics in soil studies. Soil Sci.50(4):239-252,illus. Oct.1940. 56.8 So3
"References,"p.252.
"The name 'soil moisture characteristic curve' is proposed for curves obtained by plotting soil moisture content against the suction pressure,or any convenient function of the latter,with which the soil water is held.The use of soil moisture characteristics in soil studies is illustrated by application to the study of tilth in the field and of soil stability.A definition of soil stability is proposed,enabling this property to be expressed by a numerical value.Finally,the classification of so-called types of soil water and mathematical expressions for soil water pressure deficiency are discussed in the light of known types of moisture characteristics."

Davis,C.H. Absorption of soil moisture by maize roots. Bot.Gaz.101(4): 791-805,illus. June 1940. 450 B652
"Literature cited,"p.805.

Stone,J.T.and Garrison,C.S. Relationship between organic matter content and moisture constants of soils. Soil Sci.50(4):253-256,illus. Oct. 1940. 56.8 So3
"Many line fences in Michigan were established at the time the land was cleared,or shortly afterward.Along these fence rows a continuous

sod of bluegrass has existed,while a few feet away,in the adjoining fields,the customary rotations,with the usual tillage and other soil management practices,have been followed.Preliminary studies having shown that the soil under the sod was appreciably higher in organic matter than the soil in the adjoining fields,a more complete comparative study was undertaken.

"...In all but one case the organic matter content of the sample collected from under sod was higher than that of the sample from the adjoining field.

"With two exceptions,the soil under sod had a higher moisture equivalent than the corresponding soil in the field.

"In all but five samples,the hygroscopic moisture content of samples from fence rows was higher than that of corresponding samples from fields.In seven cases,the wilting coefficient of the field soil was higher than that of the corresponding soil under sod.

"Available moisture content was found to be greater in the soil under sod,with one exception,than in the corresponding soil from the field.

"A study of the data by means of Fisher's method showed a direct correlation between organic-matter content of the soils and their available moisture,with a correlation coefficient of 7.28!"

Soil Studies

Bracken,A.F. Effect of various soil treatments on nitrates,soil moisture,and yield of winter wheat. Soil Sci.50(3):175-188,illus. Sept.1940. 56.8 So3

"References,"p.188.

Jewett,T.N. Sorption by clays. Soil Sci.50(3):163-173,illus. Sept. 1940. 56.8 So3

"References,"pp.172-173.

"In the present paper are reported measurements of sorption of water vapor and of toluene vapor by some clays separated from Sudan topsoils(1-foot layer) by sedimentation in water."

"McBain's term 'sorption' is applied to the whole process of vapor uptake by soils and clays.Earlier work on the sorption of vapors is discussed,and the importance of the fundamental differences between the behavior toward water of montmorillonite and kaolinite clay types is stressed.

"It is considered that the basis of this difference lies in differences in the specific attraction for water of the two minerals.Toluene sorptions of a number of Sudan clays have been measured.The sorption of toluene is regarded as a particular instance of the sorption which takes place with any condensable vapor,and which is a measure of such quantities as surface area and capillary distribution.The water sorptions of the same clays have been measured;though water is sorbed physically by the same mechanism as toluene,it can also be held by forces which are specific to water.It has been found that soil colloids with low silica contents sorb,under the conditions of these experiments, similar amounts of water and toluene;those with high silica-sesquioxide ratios sorb much more water than toluene.These differences are also related to the pedological nature of the clays."

Kittredge,Joseph. A comparison of forest floors from plantations of the same age and environment. Jour.Forestry 38(9):729-731,illus. Sept.1940. 99.8 F768

"The forest floor,comprising the organic accumulation on the surface of the mineral soil,in addition to being a form of ecological reaction, has considerable importance in the development of the soil profile and in such matters as fertility,infiltration,surface runoff and erosion. Where forest vegetation is being used for the protection of eroding soil,the effectiveness of different species in contributing to the net accumulation of forest floor may be a consideration in the choice of species.

"...By way of summary,the following points may be emphasized.

1.Plantations 30 years old in the same environment produced forest floor in decreasing amounts from Monterey pine with 24.3 metric tons per acre,through maritime pine,Canary pine,Douglas fir,Monterey cypress, redwood and madrone,to Christmasberry with 4.8 metric tons per acre.

2.The differences between species are statistically significant except for the Canary pine,Douglas fir,Monterey cypress,and redwood which have median values between 11.2 and 12.6 metric tons per acre.

3.The amounts of forest floor are not consistently related to the size,density,or growth of the stands.

4.The species growing naturally on or near the area tend to have less forest floor than those introduced from distant localities.

5.The net amounts of floor up to 30 years are continuing to increase at rates in excess of the mean annual."

Longnecker,T.C.and Sprague,H.B. Rate of penetration of lime in soils under permanent grass. Soil Sci.50(4):277-288,illus. Oct.1940. 56.8 So3

"References,"pp.287-288.

"The effect of surface applications of hydrated lime and ground limestone on established sods on 12 soil types which had all been moved to one location was studied with respect to rate of changes in soil pH values,associated changes in available calcium,permeability as measured by soil moisture content,and response of the grass."Reports of results are given.It is stated also that "the moisture content in the upper 4 inches of soil was greatly increased as a result of liming.The vigor and density of sod was also improved,but whether this was due to more abundant soil moisture or to changes in pH and available calcium,was not determined."

Parker-Rhodes,A.F. Preliminary experiments on the estimation of traces of heteroauxin in soils. Jour.Agr.Sci.[England]30(4):[654]-671,illus. Oct.1940. 10 J822

"References,"p.671.

"A method is described by which small quantities of indolyl acetic acid can be detected and measured quantitatively,depending on the effect of this substance on osmotic pressure of root hair cells of wheat seedlings.Full details are given of the procedure adopted and the precautions which it was found necessary to take,and suggestions are put forward as to how the method might be rendered more accurate if necessary.Possible sources of error are also discussed.

"The most valuable application of the methods described,as far as they have been developed,is likely to be in throwing light on the

biology of the soil micro-organisms. Furthermore there are many problems connected with the function of heteroauxin in plant physiology, hitherto obscure, which might be profitably attacked with the help of a method such as this, capable of detecting and accurately measuring such very small quantities of the active substance."

Penman, H.L. Gas and vapour movements in the soil. II. The diffusion of carbon dioxide through porous solids. Jour.Agr.Sci.[England]30(4): [570]-581, illus. Oct.1940. 10 J822

"References," p.581.

"Apparatus for measuring the rate of diffusion of carbon dioxide through granular solids is described and the results obtained with it are shown to conform to the curve connecting $D/D_0$ and S previously obtained for carbon disulphide and acetone. The equation $D/D_0=0.66S$, which it is suggested should replace Buckingham's equation $D/D_0= S^2$, is applied to a discussion of soil aeration, and it is shown that at all porosities the rate of diffusion of carbon dioxide from the soil is sufficient to account for normal respiration without invoking the assistance of meteorological changes. A further application of the equation to water vapour movement in soils is briefly discussed."

Spurr, S.H. The influence of two Juniperus species on soil reaction. Soil Sci.50(4):289-294, illus. Oct.1940. 56.8 So3

"References," p.294.

"In order to measure the influence of vegetation on soil reaction, experiments were carried on in the vicinity of New Haven in the fall and winter of 1939-40, Red cedar, Juniperus virginiana, and ground juniper, Juniperus communis, growing on old field soils were chosen for this purpose; and on three divisions of the Eli Whitney Forest of the New Haven Water Company, blocks were laid out, in each of which a series of random samples was taken."

"Both Juniperus virginiana and Juniperus communis alter the pH of old field soils in the vicinity of New Haven. The first species raises the pH of the upper part of the mineral soil and lowers it at a depth of 6 inches. Juniperus communis, on the other hand, lowers the pH at both depths. Tentatively, it may be concluded that the addition of litter is a highly important factor influencing the pH of the upper part of mineral soil and withdrawal of soluble substances by the roots appears to be of similar importance at a 6-inch depth."

Thorp, James and Baldwin, Mark. Laterite in relation to soils of the tropics. Assoc.Amer.Geog.Ann.30(3):163-183, illus. Sept.1940. 500 As73

"References," pp.182-183.

Terracing

Beaumont, A.B. Saves water too. Soil Auger(Mass.Ext.Serv.)1(3):4-5. Sept.1940. 275.29 M381So

Tells of first orchard set on level terraces in Massachusetts, that at Massachusetts state college.

Home equipment mechanizes soil saving. Kans.Farmer 77(20):9, illus. Oct.5,1940. 6 K13

"The terracing program thruout the country may be speeded up as a

result of a discovery that 'homemade' terraces can be built with a tractor-mounted disc-plow - at less than half the cost of terraces built with heavy contract graders.The plow is a standard model 'direct-connected' to the tractor,more suitable for constructing and maintaining terraces than 'pull-type' models...

"Details of the new terracing method are being demonstrated to county agents and vocational agriculture instructors[in Texas]who in most cases will assist the farmer in laying out contour lines with instruments."

Trees

Hyatt,H.C. Trees of yesterday and tomorrow. Amer.Forests 46(11): [496]-[499],528,illus. Nov.1940. 99.8 F762

"Coal companies of southern Indiana unite in reforestation program to make mined earth a new land of trees,scenic beauty,and recreational wealth."

Jackman,E.R. Trees and the soil. Better Crops with Plant Food 24(8): 13-14,46-47,illus. Oct.1940. 6 B46

Stresses fact that the most of the good soils of the world were either built up under a cover of trees or were deposited by wind or water.

Smith,C.R. Trees that temper hot winds. Amer.Forests 46(11):487-[489], 526-528,illus. Nov.1940. 99.8 F762

Indicates the importance of newly planted trees in the rehabilitation of farm life in Northern Nebraska where a short time ago "the winds in their soil-stealing marches had begun to write ruin across the farm lands".

Smith,C.T. Central Wisconsin shelterbelts. Wis.Conserv.Bul.5(9):23-24,illus. Sept.1940. 279.8 W752

Water Resources and Conservation

Knapp,G.S. Water resources of the Mid-Continent area. Civ.Engin. 10(10):653-[655],illus. Oct.1940. 290.8 C49

"A variety of geographic,climatic,and hydrologic conditions govern the water supply and runoff of the great central part of the United States.Records going back in some instances for over a hundred years are here summarized to indicate that average temperature has been going up appreciably over the past few decades and with it evaporation. These effects,combined with decreasing rainfall,magnify the acute problems of water resources.Mr.Knapp's paper,here abridged,was originally on the program of the Society's Spring Meeting in Kansas City."

McDonald,C.H. Stock water and range reservoir experiments[in Idaho]. Amer.Cattle Prod.22(2):3-6,illus. July 1940. 49 P94

Olson,W.S. Water planning and rainfall.The story behind Minnesota's water supply. Minn.Dept.Conserv.,Conserv.Volunteer 1(1):10-12. Oct. 1940. 279.8 C765

"Any program of water conservation must consider precipitation histories".

Spencer,F.M. Combining water users activities Humboldt project,Nevada. U.S.Bur.Reclam.,Reclam.Era 30(9):258-259,illus. Sept.1940. 156.84 R24

Wildlife

Brightman,R.T. Seek to re-establish game birds. N.Mex.18(10):24,29, illus. Oct.1940. 288.8 N46
A plan to aid in the re-establishment of game birds in Curry County, New Mexico worked out by the writer and Myron T.Bunger of the Soil Conservation Service.

Chenault,T.P. The phenology of some bob-white food and cover plants in Brazos County,Texas. Jour.Wildlife Mangt.4(4):359-368,illus. Oct.1940. 410 J827
"Literature cited,"p.368.

Emerson,J.L. The relation of Nebraska shelterbelt plantings to the State's wildlife. Nebr.Bird Rev.8(1):30. Jan.-June 1940. 413.8 N27
"On 46 shelterbelts in the Neligh,Kearney,Alliance,and Columbus, Nebraska,planting areas it was estimated that 936 Ring-necked Common Pheasants,228 Prairie Sharp-tailed Grouse,55 Greater Prairie Chickens, 67 Bobwhite Quails,13 Chukar Partridges,and several hundred small insectivorous birds were using the plantings for cover and food.This estimate is based on the number of birds seen in approximately one per cent of the shelterbelts which have been planted in the state during the past five years.Consequently,when even a weighted averaged number of birds per planting is applied to the total of 2,526 miles, or approximately 5,000 individual plantings,which are established in Nebraska,an astonishing figure results.In all districts there are many indications that all types of wildlife are making increased use of the plantings,as the trees grow older and attain greater size. Badgers,coyotes,and foxes are moving into the belts.Large well-packed trails made in the snow by pheasants and rabbits in nearly every planting of any size are definite indicators that the belts are used extensively." Abs.U.S.Fish and Wildlife Serv.Wildlife Rev.no.28, p.32, Aug.1940.

Fleet,Betty. Wildlife conservation. Md.Conserv.17(3):9-11. Summer Issue,1940. 279.8 M36
"Bibliography,"p.11.
A consideration of the value of wildlife on the farm,and requirements for protection.

Hill,R.G. Some observations on farm game management cooperatives in Michigan. Jour.Wildlife Mangt.4(4):383-391,illus. Oct.1940. 410 J827

Mason,E.A. Wildlife food plants in New England. Jour.Wildlife Mangt. 4(4):392-397. Oct.1940. 410 J827
"Literature cited,"p.397.

Moss,A.E. The woodchuck as a soil expert. Jour.Wildlife Mangt.4(4): 441-443,illus. Oct.1940. 410 J827

Nelson,U.C. Winter observations on pheasants in southeastern Minnesota. Jour.Wildlife Mangt.4(4):369-372,illus. Oct.1940. 410 J827
"The present analysis is the result of winter observations on pheasant activity in the Deer-Bear Creek Soil Conservation Demonstration Area at Spring Valley,Minn.Observations were made from December 1 to April 1 each year for 3 years (1936-39)."

Saugstad,Stanley. Effect of artificial ponds on our duck population. N.Dak.Agr.Expt.Sta.Bimo.Bul.2(2.);6-8,illus. Nov.1939. 100 N813B
Reports results of a series of studies begun in 1938 at the N.D. Agricultural experiment station on the artificial ponds created as a result of the 4,000 dams built by Biological Survey,SCS and the Farm Security Administration.

Stephens,E.S. A bobwhite restoration program. South.Planter 101(10): 12,illus. Oct.1940. 6 So89
Describes the work and policies of the Missouri Conservation Commission "based upon the conviction that good results in wildlife conservation best can be accomplished by the development of natural environment(food,cover and water)...and the recognition on the part of farmers that wildlife conservation is nothing more than good farming; that if landowners practice soil erosion control,reforestation,the building of ponds,and other methods which contribute essentially to normal agricultural welfare,the wildlife on the land will take care of itself."

Van Dersal,W.R. Utilization of oaks by birds and mammals. Jour. Wildlife Mangt.4(4):404-428,illus. Oct.1940. 410 J827
"Literature cited,"pp.421-428.

## BOOK AND PAMPHLET NOTES AND ABSTRACTS

Alabama education association.Committee on social and economic conditions in Alabama and their implications for education. Report... Ala. Educ.Assoc.Curriculum Bul.3. 142pp. Montgomery,May 15,1937. 280.9 AL2 no.3
Section XI.Utilization and conservation of natural resources,pp.98-113.

American society of agricultural engineers.Soil and water conservation division.Committee on reservoirs and ponds. Report. 43 numb.l., mimeogr. [n.p.,1940?] 292 Am3322
L.C.Tschudy,chairman.
Contents: Needs and uses of reservoirs and ponds,by L.C.Tschudy,pp. 1-6;Legal investigations and compliance with state rights,by Frank Kimball,pp.7-12;Investigations for plans,designs,and construction,by J.W.Jourdan and C.A.Haskin,pp.13-20;Designs,by C.J.Francis,pp.21-34; Construction methods,by D.S.McVicker,pp.35-43.

American society of agricultural engineers.Subcommittee on contour furrowing. Final report,1936-37,1937-1938,1939-1940. 3 nos.,mimeogr. [n.p.,n.d.] 56.9 Am33
Paul C.McGrew,chairman,1936-37 and 1937-38;Eugene C.Buie,chairman,1939-40. 1939-1940 is "annual report".

Chopra,R.S. Afforestation experiments in the Kalachitta Hills. Punjab Forest Rec.v.1,no.7, 12pp. Lahore,1940. 99.8 P96

"Report on investigations during 1934-9.The area is typical for the conditions prevailing in the extreme north-west of the Province.It presents a combination of factors adverse to afforestation,viz.friable rock,shallow and unstable soil,erratic rainfall,extremes of climate, and prevalence of widespread sheet-erosion owing to deterioration of the natural plant cover through browsing and lopping.The steep hill slopes are particularly devoid of mineral soil and cannot be afforested until a reasonable soil depth is built up under a régime of contour trenching combined with planting of Agave and Opuntia species.The gentle slopes and the valleys offer some scope for planting and the species Prosopis juliflora (arid form) has been found most suitable.The paper includes an appendix in which experimental results with hardwoods, succulents and grasses are listed by species." Abs.Forestry Abs.2(2): 137-138. 1940.

Egler,F.E. A key to the common leguminosae of the Hawaiian islands, based upon characters of fruit and leaf. 1st manuscript ed.42 numb.l., mimeogr. [Syracuse,N.Y.]N.Y.S.college of forestry,Jan.1940. 460.53 Eg5

Gow,D.B.and Speer,P.R. Compilation of records of stream flow and water storage on the Souris river in Canada and United States. 2 v., processed. [n.p.,1940] 292 G74

"Prepared at the request of the Souris river international committee of engineers." - Introd.

Hofmann,Benno. Fixation of dunes,with special reference to the shore of Rio Grande do Sul[A fixacao das dunas,con referencia especial ao litoral de Rio Grande do Sul] Rio Grande do Sul,Brazil(State)Sec.de Estado dos Negocios da Agr.,Indus.e Com.Bol.79. 41op.,illus. Porte Alegre, June 1940. 9.2 R473 no.79

Howard,Sir Albert. An agricultural testament. 253pp.,illus. London, New York,Oxford university press,1940. 56.6 H83A

"The purpose of this book is to draw attention to the destruction of the earth's capital - the soil;to indicate some of the consequences of this;and to suggest methods by which the lost fertility can be restored and maintained...It is the continuation of an earlier book - The Waste Products of Agriculture,published in 1931 - in which the Indore method for maintaining soil fertility by the manufacture of humus from vegetable and animal wastes was described."

Partial contents: Part I.The part played by soil fertility in agriculture.The nature of soil fertility.The restoration of fertility.Part II.The Indore process.Part III.Health,indisposition and disease in agriculture.Soil aeration.Some diseases of the soil.Soil erosion.The retreat of the crop and the animal before the parasite.Humus and disease resistance.The mycorrhizal association and disease.Soil fertility and national health.

The author is of the opinion that"the slow poisoning of the life of the soil by artificial manures is one of the greatest calamities which has befallen agriculture and mankind...Mother earth has recorded her disapproval by the steady growth of disease in crops,animals and mankind... The connexion which exists between a fertile soil and healthy crops,

healthy animals and,last but not least,healthy human beings must be made known far and wide."

Hudelson,R. R. The appraisal of farm land with special reference to Illinois.An abstract of a thesis...University of Illinois 1939. 16pp., illus. Urbana,1939. 282.023 H86
"This study was undertaken for the purpose of throwing some light on the factors which have the greatest influence on value of land for agricultural use,especially in the state of Illinois."

Lien-Chich,Li. Soils of Liuchianghsien,Kwangsi. China.Geol.Survey. Soil Bul.20. 16pp. Pehpei,Chungking,Jan.1940. 56.9 C43 no.20
Soil erosion,pp.14-16.

Maryland state planning commission.Water resources commission. Flow data and draft storage curves for major streams 1929-1937. Md.State Planning Comm.Water Res.Comm.Pub.28. 136pp.,tables. Baltimore, May 1940. 280.7 M36Pu no.28

Massachusetts state planning board. Westfield river. Mass.State Planning Bd.Drainage Basin Study 6. 84pp.,illus.,mimeogr. [Boston?] 1939. 280.7 M38D

Michigan academy of science,arts and letters. Papers,volume XXV,1939. 643pp.,illus. Ann Arbor,The University of Michigan press,1940. 500 M582
Partial contents: A land-type map of Livingston county,Michigan,by W.B.Dick and S.J.Ware,pp.373-383;A land-classification survey of Maple river township,Emmet county,Michigan,by W.W.Lewis,pp.407-415;Land-ownership patterns in relation to land types in Dickinson county,Michigan,by I.F.Schneider,pp.437-442.

National research council.Highway research board. Proceedings of the nineteenth annual meeting held at Washington,D.C.,December 5-8,1939. 578pp.,illus. Washington,D.C.[1940] 220 Enl 19th,1939
Report of subcommittee on plant ecology,George B.Gordon,chairman.The selection and use of ground covers on highway areas,pp.248-266.

New England wild flower preservation society,inc. Conservation week in the schools of Maine. 12pp. [n.p.,1937?] Pam.Coll.279 N
Soil conservation,by D.P.Demeritt,p.5.

North Dakota state teachers college. Experimenting with soils in the elementary grades. 8pp.,illus. Mayville,Feb.1940. (N.Dak.State Teachers Col.Bul.Ser.5,no.24) Pam.Coll.56 N
Contents: Some practical correlations of principles of conservation with schoolroom activities,by E.V.Johnson,pp.3-5;Soil testing,by H.C. Burdick,pp.5-7;Bibliography on soil conservation and use,pp.7-8.

Ohio vegetable and potato growers association. Proceedings of the twenty-fifth annual meeting,1940. 218pp.,illus. [n.p.,1940] 75.9 Oh3 25th,1940
Partial contents:Soil moisture problems during plant growth,by L.D.Baver, pp.5-9;Irrigation - its effect on pore space,set and yield of potatoes, by E.B.Tussing,pp.154-164.

Oliphant,J.N.. The future of forestry in tropical Africa. 17pp. Roma,Reale accademia d'Italia,1940. SCS Reprint File

"Estratto dagli atti dell'VIII convegno tema:L'Africa,Roma,4-11, Ottobre 1938-XVI."

"Forestry in tropical Africa is largely concerned with the defence of vegetation against destructive activities,such as shifting cultivation,over-grazing,bush firing and clearing of land for cultivation of a temporary character.Destruction of vegetation is causing deterioration of soil,climate,and water supply on an alarming scale,and systematic planning of land use is urgently needed." Recommendations are given.

Renner,G.T.and Hartley,W.H. Conservation and citizenship. 367pp., illus. Boston,D.C.Heath and co.,c1940. 279 R29

A textbook for high school use which treats the problem of conservation as it involves human resources as well as the natural endowment.

Appendix A.Motion pictures,pp.333-340;Appendix B.Books to read,pp. 341-350.

Smith,J.R.and Phillips,M.O. North America.Its people and the resources, development and prospects of the continent as the home of man. 1008pp., illus. New York Harcourt,Brace and company[c1940] 278.11 Sm6N 1940

"When the first edition of this book was written,the rocket of... growth was describing a sharply ascending curve across the statistical sky...it indicated increasing population,new communities,expanding business,increasing wealth...

"The new edition...was written under a darker sky - a sky clouded by new and unhappy realization of definite and painful facts.The curve of the graph has flattened...The National Resources Board has shocked all who read and considered its reports[presenting]facts about the waste of our matchless heritage,the foolish destruction of irreplaceable natural resources...

"When the sons could go West,take up good land,and grow up with the community,there was less need for youth to know about the geography of the continent.Today the young generation must face a new epoch - the epoch of the more intensive utilization of a continent that has already become bit by bit the possession of individuals or groups of individuals.What resources are at our hand,and how many we safeguard and develop them?

"This book is an attempt to answer that question in the light of conditions prevailing in 1940."

Soil science society of America.Proceedings 1939. Volume 4 contains papers presented at meeting held in New Orleans,La.,November 22-24, 1939. 455pp.,illus. Morgantown,W.Va.,Published by the Soil science society of America[1940] 56.9 So3 v.4

Partial contents:The relation between moisture content and the microaggregation or the degree of dispersion in soil by L.Kolodny and J.S. Joffe,pp.7-12;Variations in the state and stability of aggregation as a result of different methods of cropping,by C.M.Woodruff,pp.13-18;Soil aggregation as affected by certain crops and organic materials and some chemical properties associated with aggregation,by J.C.Hide and W.H.Metzger,pp.19-22;Volume change of soils in relation to their infiltration rates,by G.M.Browning,pp.23-27;Pore-size distribution as

related to the permeability of soils,by J.F.Lutz and R.W.Leamer,pp. 28-31;Soil moisture sorption curves for four Iowa soils,by M.B. Russell,pp.51-54;Observations on moisture conditions in lysimeters. II,by L.A.Richards,O.R.Neal and M.B.Russell,pp.55-59;Surface factors affecting the rate of intake of water by soils,by F.L.Duley,pp.60-64; The effect of surface cover on soil moisture losses by evaporation,by J.C.Russel,pp.65-70;The effect of saline irrigation water upon the permeability and base status of soils,by Milton Fireman and G.B.Bodman, pp.71-77;An electrothermal method for following moisture changes of the soil in situ,by Byron Shaw and L.D.Baver,pp.78-83;A dielectric method for determining soil moisture,by J.F.Fletcher,pp.84-88;Percolation and sorption of water as they relate to infiltration in Collington sandy loam,by S.J.Richards and J.S.Joffe,pp.94-99;Grouping of soil types to indicate erosion potentialities,by R.W.Gardel and A.H.Paschall, pp.372-374;Classes of land according to use capability,by E.A.Norton, pp.378-381;Technic and use of aerial photographs for soil mapping and reproduction of field maps,by W.H.Buckhannan,pp.382-386;Soil changes resulting from long use of land in China,by James Thorp,pp.393-398; Soil changes due to erosion,by H.H.Bennett,pp.399-401;Some soil changes resulting from drainage,by H.B.Roe,pp.402-409;Soil changes due to irrigation and related treatments,by W.L.Powers,pp.410-414;Irrigation efficiency studies,by W.L.Powers and B.R.Bertramson,pp.415-419;Some concurrent and residual effects of organic matter additions on surface runoff,by O.R.Neal,pp.420-425;Influence of soil type and other site factors on the success of tree plantings for erosion control,by W.S. Ligon,pp.425-427;A method for calculating the amount a farmer can afford to invest in erosion control measures,by H.H.Morse and R.C. Barre,pp.428-432;Soil moisture tension under various conservation practices,by H.C.Knoblauch,S.J.Richards and H.C.Lint,pp.433-437.

Solin,Lawrence. A study of farm woodland cooperatives in the United States. N.Y.State Col.Forestry Tech.Pub.48. 118pp.,illus. Syracuse,Mar.1940. 99.9 N486T no.48
Bibliography,pp.105-108.

South Dakota academy of science. Proceedings 1939,volume XIX. 132pp., illus. Vermillion,Oct.1,1939. 500 So82 v.19,1939
Partial contents: A physiological comparison of virgin and cultivated soils in southeastern South Dakota,by J.R.Hurt and H.C.Eyster,pp.82-85; Erosion of water plants,by H.C.Abbott,pp.107-108.

Staples,R.R.and Hudson,W.K. An ecological survey of the mountain area of Basutoland. 58pp.,illus. [Letchworth,Hertfordshire,The Garden city press,ltd.,1938. 35.3 St2
Utilisation of the mountain area,pp.19-27;Problems arising through use(including erosion)pp.28-39.

Svobida,Lawrence. An empire of dust. 203pp.,illus. Caldwell,Idaho, Caxton printers,ltd.,1940. 281.0293v5
The author states in his preface that he writes,from his own experience,"a true,inside story of the plight of the average farmer in the Dust Bowl,relating facts without malice or prejudice".

Tharp,B.C. The vegetation of Texas. 74pp.,illus. Houston, Published for the Texas academy of science by the Anson press,Nov.1939. 455.63 T32V

Virginia soil conservation committee. Save your soil. [6 nos.] [Richmond?]June 1940. 56.7 V81
Contents:[no.1]Healing galled spots and gullies;[no.2]Pasture improvement;[no.3]Safe disposal of run-off water;[no.4]Strip cropping and contour tillage;[no.5]Terracing;[no.6]Woodland management.

Wallace aerial surveys. Aerial mapping as applied to agriculture. 38pp.,illus. Spokane,Wash.,[n.d.] 332 W152
Contains an article on the history of aerial mapping,pp.1-4;The agricultural aerial survey:its possibilities by F.E.Balmer,pp.6-15; Converting aerial photographs to farm acreage,by L.O.Howard,pp.28-30; Aerial photography applied to soil surveys in the state of Indiana,by T.M.Bushnel,pp.35-36.

Wilson,E.D. Bibliography of the geology and mineral resources of Arizona. Ariz.Univ.Bul.v.10,no.2. 164pp. Tucson,Apr.1,1939. 2416.5 W69

## STATE EXPERIMENT STATION AND EXTENSION PUBLICATIONS

### California

Storie,R.E. Natural land divisions of Santa Cruz county,California: their utilization and adaptation. Calif.Agr.Expt.Sta.Bul.638. 56pp.,illus. Berkeley,July 1940. 100 C12S no.638

### Delaware

Bausman,R.O. An economic study of land utilization in Kent county, Delaware. Del.Agr.Expt.Sta.Bul.224. 99pp.,illus. Newark,Apr. 1940. 100 D37S no.224

### Illinois

Illinois university.College of agriculture.Extension service. Planning the farm business.Examples,blank forms and basic data on which to formulate the plan,prepared by J.B.Cunningham,P.E.Johnston and M.L. Mosher. 28pp.,illus. Urbana[1940?] 275.2 I162Pla
Soil conserving practices are included.

Smith,N.L.and Norton,L.J. Mortgage debt and land use in Cumberland county. Ill.Agr.Col.Ext.Serv.Ill.Farm Econ.62:376-377,table. July 1940. 275.28 I15

Smith,R.S.and Smith,L.H. Cumberland county soils. Ill.Agr.Expt.Sta. Soil Rpt.69. 39pp.,illus. Urbana,June 1940. 100 I16So no.69

Smith,R.S.and Smith,L.H. Jasper county soils. Ill.Agr.Expt.Sta.Soil Rpt.68. 27pp.,illus. Urbana,June 1940. 100 I16So no.68

Walker,E.D.and Hackleman,J.C. Getting better stands of legumes and grasses for soil conservation. Ill.Agr.Ext.Serv.AG792. 18pp., mimeogr. Urbana,Feb.1940. 275.28 I162 Pag

Indiana

Robertson,Lynn,Young,E.C.and Houk,H.J. Types of farming in Indiana. Ind.Agr.Expt.Sta.Bul.342. rev.ed.,52pp.,illus. Lafayette,July 1939. 100 In2P no.342

Kentucky

Karraker,P.E.and Ligon,W.S. A key to Kentucky soils. Ky.Agr.Expt. Sta.Cir.51. 36pp. Lexington,Apr.1940. 100 K41 no.51

Louisiana

Cox,G.N. A summary of hydrologic data Bayou Duplantier watershed, 1933-1939. La.Engin.Expt.Sta.Stud.Engin.5. 37pp.,illus. [University]July 1940. 290.9 L93S no.5

Maine

Gile,B.M. Economic utilization of rural land resources in Beauregard parish,Louisiana. La.Agr.Expt.Sta.Bul.322. 35pp.,illus. University, June 1940. 100 L93 no.322

Maryland

Hamilton,A.B.and Johnson,T.D. Types of farming in Maryland. Md.Agr. Expt.Sta.Bul.432. 271pp.,illus. College Park,Feb.1940. 100 M36S no.432

Minnesota

Engene,S.A.and Pond,G.A. Agricultural production and types of farming in Minnesota. Minn.Agr.Expt.Sta.Bul.347. 70pp.,illus. [University Farm,St.Paul]May 1940. 100 M66 no.347
Utilization of land in farms,pp.16-20.
Utilization of tillable land,pp.21-34.

Missouri

Coleman,O.T.and Klemme,A.W. Measuring annual changes in soil productivity. Mo.Agr.Col.Ext.Serv.Manual 7. 12pp.,tables,processed. Columbia,Mar.1939. 275.29 M68Ma no.7
Erosion by water causes large losses in soil productivity,p.3;Erosion and soil productivity factors measure productivity trends,pp.3-4;The use of the productivity and erosion factors,pp.4-5.
Table III Erosion factors or per cent of top 7 inches of soil lost annually from water erosion for different crops or cropping systems on different degrees and lengths of slope.
Table IV.Showing the use of productivity and erosion factors on 160 acre farm.

Montana

Monson,O.W.and Quesenberry,J.R. Range improvement through conservation of flood waters.A report of progress. Mont.Agr.Expt.Sta.Bul. 380. 20pp.,illus. Bozeman,July 1940. 100 M76 no.380
Based on studies under way at the U.S.Range livestock experiment station,Miles City,Montana"1.to determine,by measurement,the actual runoff from small watersheds;2.to determine the extent to which the runoff can be recovered and used for the protection of feed and the improvement of the range;3.to investigate the possibilities of range reseeding and rejuvenation through the conservation and use of water otherwise lost through runoff."

Nebraska

Nebraska university.College of agriculture.Extension service. Basic information for a land use program in Douglas county,Nebraska. [n.p.] maps. Lincoln,1936. 275.2 N27B

New York

Gustafson,A.F. The control of soil erosion in New York. N.Y.Agr. Col.(Cornell)Ext.Bul.438. 38pp.,illus. Ithaca,June 1940. 275.29 N48E no438
Information on protecting soils from washing and blowing;and holding fruit soils against washing.

Ohio

Morison,F.L. The experimental agricultural conservation program in Licking county,Ohio.A study of the results in 1939. Ohio Agr.Expt. Sta.Dept.Rural Econ.Mimeogr.Bul.129. 23pp.,processed. Columbus, June 1940. 281.9 Oh32 no.129

Ohio state university.College of agriculture and domestic science. Extension service. Soil building practices in the 1940 agricultural conservation program. 16pp.,illus. Columbus,[1940?] 275.2 Oh32Sb
Outlines essentials of soil conservation in Ohio.

Oregon

Schuster,C.E.and Stephenson,R.E. Soil moisture,root distribution and aeration as factors in nut production in western Oregon. Oreg.Agr. Expt.Sta.Bul.372. 32pp.,illus. Corvallis,June 1940. 100 Or3 no.372
"Literature cited,"pp.31-32.

South Dakota

Penn,R.J.,Musbach,W.F.and Clark,W.C. Possibilities of rural zoning in South Dakota.A study in Corson county. S.Dak.Agr.Expt.Sta.Bul.345. 23pp.,illus. Brookings,Sept.1940. 100 So82 no.345

Tennessee

Hendricks,H.E. Conservation and use of manure on Tennessee farms. Tenn.Agr.Col.Ext.Pub.234. 7pp.,illus. Knoxville,Apr.1940. 275.29 T25no234

Texas

Dickson,R.E.,Langley,B.C.and Fisher,C.E. Water and soil conservation experiments at Spur,Texas. Tex.Agr.Expt.Sta.Bul.587. 67pp.,illus. College Station,July 1940. 100 T313 no.587

"A report is given of the results of 14 years' work at substation no.7,Spur,Dickens County,Texas,in a study of factors influencing run-off and erosion and the effect of conservation practices on plant growth. The results are directly applicable to about 14 million acres in which Miles and Abilene soils predominate,and are indirectly applicable to all regions where soil moisture at some time during the year may be inadequate for maximum plant growth or where there is danger of the soil becoming impoverished through erosion."

The discussion covers analysis of rainfall data;intensity of rainfall in relation to runoff;influence of tillage on runoff and erosion; influence of slope on runoff and erosion;influence of crops on runoff and erosion;the syrup pan terrace system;penetration and evaporation of soil moisture;range improvement and related grass studies;water conservation on farmsteads,parks and highways.

Fraps,G.S.and Cory,V.L. Composition and utilization of range vegetation of Sutton and Edwards counties. Tex.Agr.Expt.Sta.Bul.586. 39pp. College Station,June 1940. 100 T31S no.586

## U. S. GOVERNMENT PUBLICATIONS

Agriculture Department

U.S.Agricultural adjustment administration.Division of information. The land - our ultimate security;address by Representative Marvin Jones,chairman of the House committee on agriculture,in the House of representatives,July 1,1940. 10pp.,mimeogr. [Washington,D.C.,July 1940. 1.94 Ad45La

U.S.Bureau of agricultural economics. County planning series. 7 nos. Washington, U.S.Govt.print.off.,1940. 1.Ec7Cp

Contents: no.1.County land use planning;no.2.Membership of land use planning committees;no.3.The land use planning organization;no.4.The scope of land use planning;no.5.Pooling ideas in land use planning; no.6.Communities and neighborhoods in land use planning;no.7.Rural zoning and land use planning.

U.S.Bureau of agricultural economics. Foundations of land use planning, a study guide.Prepared by the Bureau of agricultural economics in cooperation with Extension service,U.S.D.A. 92pp. mimeogr. [Washington,D.C.,1940] 1.941 L3F82

U.S.Bureau of agricultural economics. Land-use adjustment in the Buffalo creek grazing district,Yellowstone county,Montana,by James H.Marshall and Stanley W.Voelker. 59pp.,illus.,mimeogr. Washington,D.C.,Aug.1940. 1.9 Ec76Le

U.S.Bureau of agricultural economics. A possible approach to land use planning and farm management problems by teachers of vocational agriculture;address by Rex E.Willard,Regional representative...Berkeley, California,before the twenty-second annual conference of executive officers,state directors,state supervisors and teacher trainers in agriculture,home economics,trade and industrial,and business education, Pacific region...Seattle,Washington,May 9,1940. 16pp.,mimeogr. [n.p.,1940] 1.941 P4P84

U.S.Bureau of agricultural economics. Probable effects of the agricultural conservation program on livestock production in the midwest dairy region. 5 nos.,processed. Washington,D.C.,Jan.1940. 1.941 L6 P94
Part I. A summary of the studies of selected areas,by S.E.Johnson, R.L.Mighell, and F.T.Hady;Part II. Northeastern Iowa.A corn belt transition area,by S.E.Johnson,R.L.Mighell and F.T.Hady;Part III.Southeastern Minnesota.A corn belt transition area and east central Minnesota - an area with no close alternatives to dairying,by S.E.Johnson,R.L. Mighell, and F.T.Hady;Part IV.Four Wisconsin areas - areas with no close alternatives to dairying,by S.E.Johnson,R.L.Mighell, and F.T.Hady;Part V.Southeastern Michigan - a corn belt transition area and west central Michigan - an area with no close alternatives to dairying,by S.E.Johnson,R.L. Mighell, and F.T.Hady.

U.S.Dept.of agriculture. Achieving a balanced agriculture.How the national farm program meets the changing problem. rev.ed.,74pp., illus. Washington, U.S.Govt.print.off.,1940. 1 Ag84Ac

U.S.Dept.of agriculture.Interbureau coordinating committee on state legislation. State legislation for better land use.Outline of a proposed report. 4lpp.,mimeogr. [Washington,D.C.,1940] 1.90 C2In8S

U.S.Farm security administration. Green county,Georgia(The story of one southern county). 13pp.,processed. [Washington,D.C.,Oct1,1940] 1.95 G821
"Greene county is a picture on a small scale of what a unified social and economic program can do for destitute farm people...Thousands of people have literally been brought back to life through the help of Federal agencies,and these same activities have,at long last,stopped the progressive ruination of the soil."

U.S.Forest service.Div.of engineering. Water developments and sanitation handbook. v.p.,illus.,processed. [Washington,D.C.]1940. 1962 E2W29

U.S.Forest service.Northern region. Native trees of Montana and northern Idaho. 43pp.,illus.,processed. [Missoula,Mont.,May 1940] 1.9621 R1N21

U.S.Office of experiment stations. Report...1939. 265pp. Washington, U.S.Govt.print.off.,June 1940. 1 Ex6A
Soil conservation and land use,pp.76-79;Erosion and run-off control methods and equipment,pp.176-177;Use of irrigation water,pp.177-178.

Soil Conservation Service

Bennett,H.H. The control of soil erosion - a national challenge.An address by chief,Soil conservation service,presented at a Farm and home week meeting,University of Missouri,College of agriculture, Columbia,Missouri,October 29,1940. 24pp.,processed. [Washington, D.C.,1940] 1.96 Ad62

Bennett,H.H. Developing enlightened public opinion in conservation, by...chief,Soil conservation service.An address before the Assembly on use of human and natural resources in education,78th annual meeting,National education association,Milwaukee,Wisconsin,July 2,1940. 12pp.,processed. Washington,D.C.,Aug.1940. 1.96 Ad62

Borst,H.L.and Woodburn,Russell. Rain simulator studies of the effect of slope on erosion and run-off 1938.A preliminary report. U.S.Soil Conserv.Serv.SCS-TP-36. 43pp.,illus.,processed. Washington,D.C. Aug.1940. 1.96 Ad6Tp no.36
"Literature cited,"pp.31-32.
Prepared at Northwest Appalachian soil and water conservation experiment station,Zanesville,Ohio

Bruce,O.C. Planning farm tours. U.S.Soil Conserv.Serv.Northeastern Reg.Reg.Cir.28. 2pp.,processed. Upper Darby,Pa.,Sept.20,1940. 1.96O1 R26lno.28

Davis,Kenneth. Farms the rains can't take. U.S.Dept.Agr.Misc.Pub.394. Washington, U.S.Govt.print.off.,1940. 1 Ag84M no.394
Recommendations for reducing soil and water losses in the upper Mississippi valley,based on findings at the LaCrosse,Wis.SCS experiment station.

Garin,A.N.and Forster,G.W. Effect of soil erosion on the costs of public water supply in the North Carolina Piedmont. U.S.Soil Conserv. Serv.Res.Econ.Res.Div.SCS-EC-1. 106pp.,illus.,processed. Washington, D.C.,July 1940. 1.96 Ad6Ec no.1
"Glossary,"pp.81-86.
"Selected bibliography,"pp.87-90.

Hubbell,D.S.and Thompson,G.D. A progress report of the livestock demonstration conducted by operations in cooperation with the Navajo experiment station at Mexican springs on the Navajo reservation with brief reference to the research program. U.S.Soil Conserv.Serv.Southwest Reg.Reg.Bul.67. 9pp.,processed. Albuquerque,Jan.1,1940. 1.9608 R26 no67

Langley,B.C.and Bidwell,D.L. Compilation of rainfall and run-off from the watersheds of the Texas agricultural experiment station,Substation no.7,Spur,Texas,1928-38.Prepared in cooperation with Texas agricultural experiment station. U.S.Soil Conserv.Serv.Res.SCS-TP-35. 7pp.,tables, processed. Washington,D.C.,June 1940. 1.96 Ad6Tp no.35

Mumford,Lewis. Regional planning in the Pacific Northwest:a memorandum. U.S.Soil Conserv.Serv.Southwest Reg.Reg.Bul.64. 14pp.,processed. Albuquerque,Jan.12,1940. 1.9608 R26 no.64

Oakes,Harvey. Erosion and related land use conditions on the Lake Crook watershed,Lamar county,Texas. U.S.Soil Conserv.Serv.Erosion Survey 14. 23pp.,9 sheets fold.in box,illus. Washington, U.S.Govt.print. off.,1940. 1.6 So3l no.14

O'Neill,J.P. Designs for suspended-load samples based upon an experimental investigation of the disturbances caused by the instruments and analysis of sediment-laden flow. U.S.Soil Conserv.Serv.SCS-TP-33. v.p.,illus.,processed. Washington,D.C.,July 1940. 1.96 Ad6Tp no.33

Rule,G.K.and Netterstrom,R.W. Soil defense in the Pacific southwest. U.S.Dept.Agr.Farmers' Bul.1848. 55pp.,illus. Washington, U.S.Govt. print.off.,1940. 1 Ag84F no.1848

"The Pacific Southwest,as considered in this bulletin,embraces the two states - California and Nevada."

Points covered include cover in irrigated orchards,contour cultivation,trashy fallow,basin listing,subsoiling,strip cropping,terracing, the drainage terrace,grade ditches,annual ditches,terrace outlets and outlet structures,gully control,erosion control on range land,irrigation practices,defense measures in action at the Las Posas project, Caliente,Nev.and Corralitos,Calif.

U.S.Soil conservation service. The effect of contour cultivation on runoff,by H.C.Knoblauch and J.L.Haynes. 10pp.,illus.,processed. Washington,D.C.,Sept.1940. 1.96 R31Ef

Duplicated from Proceedings of the American Geophysical Union,1940.

U.S.Soil conservation service. A policy statement on relationships between the Soil conservation service and the Extension service. 7pp., processed. [Washington,D.C.]Mar.29,1940. 1.96 Ad6Mm[no.4244]

U.S.Soil conservation service. Range ecology,by David F.Costello,Rocky Mountain forest and range experiment station,Fort Collins,Colorado. 125pp.,illus.,processed. Washington,D.C.[1940] 1.96 Ad6Ran

"Reprinted by permission of the Forest Service,U.S.D.A."

"This course discusses some of the ecological concepts that are of practical value to the range administrator and presents some of the important relationships and reactions that arise when grazing animals eat the vegetation on the range...Most of the specific examples given are based on information gathered in Colorado and Wyoming,and may or may not apply to range lands in other states."

U.S.Soil conservation service.Northern Great Plains region. Youth and the soil.A unit for schools,developed by the State teachers college, Mayville,North Dakota in cooperation with the North Dakota state extension service and the Soil conservation service,United States Department of agriculture,By Arthur W.Emerson,Division of Information. 52pp., processed. Lincoln,June 1940. 1.9607 Y8

"References,"pp.50-52.

"This publication sets forth the plans and procedures followed in

incorporating soil conservation thinking in the minds of students."
Includes words and music for a song called "Conservation".

U.S.Soil conservation service.Pacific northwest region. Irrigation imposes responsibility.A paper presented by Jack V.Rodner at the meeting of the Washington irrigation institute,December 7-8,1939. 88pp.,processed. [Spokane,Wash.,1939?] 1.9609 R61
A picture of the erosion problem as it affects irrigated agriculture, particularly in the state of Washington.

U.S.Soil conservation service.Pacific northwest region. Land-use in the Pacific northwest and the problem of soil and moisture conservation, by W.A.Rockie. 25pp.,processed. Spokane,Wash.,[1940] 1.9609 R59

U.S.Soil conservation service.Southeast region. Economic feasibility of a program of soil conservation(with special reference to Franklin county,N.C.),by S.W.Atkins,project supervisor,Division of economic research,Raleigh,N.C. 8pp.,processed. [Spartanburg,S.C.,1940] 1.9602 Ec7
An address presented before Soil conservation section of Association of southern agricultural workers,Birmingham,Ala.,February 7,1940.

U.S.Soil conservation service.Southern great plains region. Annual report 1939-1940,region 6. 64pp.,processed. Amarillo[1940] 1.9606 Ar7 1939/40

U.S.Soil conservation service.Upper Mississippi region. Planning small farms for soil conservation[by]Hjalmer O.Anderson.Issued by Division of economic research,LaCrosse,Wisconsin. 9pp.,tables,processed. [Milwaukee]Aug.1940. 1.9605 P692

U.S.Soil conservation service.Upper Mississippi region. Run-off and and soil losses from critical storms occurring in the upper Mississippi valley[by]O.E.Hays[and]H.E.Atkinson. 7pp.,tables,processed. [Milwaukee,Wis.,Aug.1940] 1.96 R31Run
"This report includes data from 38 storms occurring during the period 1934 to 1939,inclusive,at the soil conservation experiment station at La Crosse,Wisconsin."
Soil losses and control benefits are given for the following vegetative covers:wooded area,pasture area,3-year rotation,grain and hay.

U.S.Soil conservation service.Upper Mississippi region. Use the land and save the soil. 14pp.,illus. Washington,U.S.Govt.print.off., June 1940. 1.6 So39U
A soil conservation program for erosion control in the states of Illinois,Iowa,Minnesota,Missouri,and Wisconsin.

Webb,D.T. Erosion and related land use conditions on the Hell and Mud creeks demonstration project,Mississippi. U.S.Soil Conserv.Serv. Erosion Survey 12. 25pp.,3 sheets fold.in box,illus. Washington, U.S.Govt.print.off.,1940. 1.6 So31 no.12

## SOIL SURVEYS ISSUED BY BUREAU OF PLANT INDUSTRY

Indiana. Jennings county,Indiana,by D.R.Kunkel,H.P.Ulrich,A.T.Wiamcko, M.E.Waggoner,J.S.James et al. Series 1932,no.40. July 1940.

Montana. Middle yellowstone valley area,Montana,by William DeYoung, F.K.Nunns and L.H.Smith. Series 1933,no.33. Aug.1940.

New York. Ulster county,New York,by A.T.Sweet and Wilbur Secor. Series 1934,no.22. June 1940.

Texas. Kaufman county,Texas,by T.H.Templin and J.W.Huckabee,jr. Series,1936,no.3. June 1940.

Wyoming. Uinta county,Wyoming,by T.W.Glassey,T.J.Dunnewald and D.W. Stevens. Series 1934,no.18. Apr.1940.

### Geological Survey

U.S.Geological survey. Surface water supply of Hawaii,July 1,1937 to June 30,1938. U.S.Geol.Survey.Water-Supply Paper 865. 122pp. Washington,U.S.Govt.print.off.,1940. 407 G29W no.865

U.S.Geological survey. Surface water supply of the United States 1938. Part 6.Missouri river basin. U.S.Geol.Survey.Water-Supply Paper 856. 419pp. Washington,U.S.Govt.print.off.,1940. 407 G29W no.856

Williams,G.R.et al. Natural water loss in selected drainage basins. Prepared in cooperation with the research and statistical division of the Works progress administration for New York City and the Soil conservation service,United States Department of agriculture. U.S.Geol. Survey.Water-Supply Paper 846. 62pp.,illus. Washington,U.S.Govt. print.off.,1940. 407 G29W no.846

"This report is primarily a statistical study that presents the results of computations of annual water loss,or annual rainfall minus annual run-off,for river basins in the humid or semiarid regions east of the Rocky Mountains...Results are given for about 200 drainage areas...

"As the annual water loss from a basin is affected by the temperature, a supplemental study was made of the relation between water loss and temperature.For 28 drainage areas selected in various parts of the eastern and central United States,average temperatures were computed for each year of the period shown in table 1.The results indicate a relation between average annual water loss and average annual temperature."

Table I.Summary of precipitation,run-off and water loss,pp.13-18.
Table II.Precipitation,run-off and water loss by years,pp.19-47.

### Miscellaneous

Bathhurst,E.G. Curriculum content in conservation for elementary schools. U.S.Off.Ed.Bul.1939,no.14. 79pp.,illus. Washington,U.S.Govt.print. off.,1940. 156.3 B87 1939,no.14

Bibliography,pp.75-79.

Cassady,J.T.and Glendening,G.E. Revegetating semidesert range lands in the southwest. U.S.Civilian Conserv.Corps.Forestry Pub.8. 22pp., illus. Washington,U.S.Govt.print.off.,1940. 173.2 C76F no.8
Includes list of names of plants suitable for revegetation work in Arizona,New Mexico and southern Texas.

Dale,Tom,and Ross,W.A. Conserving farm lands.Planning for soil-erosion control,water conservation,and efficient land use. U.S.Off.Ed.Vocat. Ed.Bul.201(Agr.Ser.53) 104pp.,illus. Washington,U.S.Govt.print. off.[1940] 173 V85B no.201
"Definitions of soil conservation terms,"pp.93-98.
"References on soil conservation,"pp.99-104.
"The organized teaching material included...is designed to assist teachers of vocational agriculture.Its primary purpose is to supply them with a reasonably complete inventory of the functioning content involved in planning a soil conservation program for a specific farm, presented in such a way that the material may be usable in systematic instruction on this activity."

Lilienthal,D.E. The widening of economic opportunity through TVA. 16pp.,illus. [Washington,U.S.Govt.print.off.?]1940. 173.2 T25Adr
This pamphlet adapted from an address by David E.Lilienthal,Director, Tennessee Valley Authority,at Columbia University,New York,January 1940.
The rebuilding of the soil as the source of our economic vitality, pp.2-4.

Pendleton,M.H.,comp. Digest of outstanding state legislation on agriculture 1935-1939. U.S.Libr.Cong.Leg.Ref.Serv.State Law Digest. Rpt.4. 113pp. Washington,U.S.Govt.print.off.,1940. 274 Un332St no.4
Soil conservation,pp.27-35,includes legislation on standard districts, wind erosion and shelter belts.

U.S.Congress.Senate.Special committee on the conservation of wildlife resources. The status of wildlife in the United States.Report... pursuant to S Res.246(71st congress)...February 13,1940... 457pp., illus. Washington,U.S.Govt.print.off.,1940. (76th Cong.,3d sess. Senate Report 1203) 148 76th,3d Rpt.1203
Report of the wildlife conservation work of the Soil conservation service(statement prepared by the Biology division,Ernest G.Holt,chief) pp.381-399.

U.S.Engineer school,Fort Belvoir,Va. Flood control. 267pp.,illus. Fort Belvoir,1940. 152.26 F65
"This text summarizes the engineering studies and data on which contemporary American flood-control projects are based."
Chapter headings are as follows:Precipitation;Run-off;Prediction of floods;Frequency of floods;Routing of floods;Reservoirs.

U.S.Tennessee valley authority. Forests and human welfare. 46pp.,illus. Washington,U.S.Govt.print.off.,1940. 173.2 T25Fh
A story,in pictures,of the use of forests by man and of their influence upon control of water on the land,with special reference to the Tennessee valley region.

## BIBLIOGRAPHIES AND LISTS

American geophysical union.Section of hydrology. Bibliography of hydrology United States of America,for the year 1939. 86 numb.l., processed. Washington,D.C.,1940. 241.6 Am32 1939

Bercaw,L.O. Indirect flood damages.A list of references. U.S.Bur. Agr.Econ.Econ.Libr.List 13. 16pp.,processed. Washington,D.C.,Aug. 1940. 1.9 Ec73E no.13

Bercaw,L.O. Relocation of farm families. U.S.Bur.Agr.Econ.Econ.Libr. List 14. 46pp.,mimeogr. Washington,D.C.,Sept.1940. 1.9 Ec73E no.14
"This annotated list of references relates to the relocation of farm families,especially isolated and submarginal settlers."

* Economic aspects of soil conservation.References to the literature on the subject. 12pp.,processed. Sept.26,1940.

Munns,E.N. A selected bibliography of North American forestry. 2v. Washington,U.S.Govt.print.off.,Sept.1940. 1 Ag84M
The section called Forest influences,pp.1042-1085,includes references on water resources,stream flow,floods and erosion.

* Root penetration and development of alfalfa,vetch and lespedeza sericea: a list of references to the literature. 7pp.,typed. Sept.27,1940.

* Soil conservation in Missouri.References to periodical articles and state publications. 3pp.,typed. Sept.19,1940.

U.S.Dept.of agriculture.Library. Selected list of American agricultural books. 37pp.,processed. Washington,D.C.,Oct.1940. 1.916 Se4
Included are books on soils,fertilizers,forestry,crops,conservation of natural resources,irrigation and drainage.

## PERSONNEL AND TRAINING

Baruch,Ismar. Basic aspects of position-classification. Pub.Personnel Rev.1(3):1-17. Oct.1940. 249.38 P962

Corson,J.J. A case study in the selection of administrative personnel. Pub.Personnel Rev.1(3):36-42,illus. Oct.1940. 249.38 P962

* Available for limited distribution from Soil Conservation Service Library, Washington, D. C.

Gladieux,B.L. Management planning in the federal government. Adv. Mangt.5(2):77-85. Apr./May/June 1940. 280.8 Sol22

Hopf,H.A. Administrative coordination. Adv.Mangt.5(2):50-56,62. Apr./ May/June 1940. 280.8 Sol22

Ogden,Warner. Office economics at TVA. Mangt.Rev.29(10):358-359. Oct.1940. 280.8 M312

FINIS